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LTAS.NET: A NIOSH LIFE TABLE ANALYSIS SYSTEM FOR THE WINDOWS ENVIRONMENT

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PURPOSE: Life table analysis is a fundamental tool of occupational epidemiology. A life table analysis system (LTAS) was developed by the National Institute for Occupational Safety and Health (NIOSH) in the 1980s. The current system, called PC-LTAS, is limited by its platform (MS-DOS) and by its analysis and reporting capabilities. A project was initiated to create a LTAS for the Windows operating system (LTAS.NET) that would permit the analysis of more than one exposure variable, as well as allow stratification by user-defined fixed and time-dependent covariates.
METHODS: A group of epidemiologists, programmers and statisticians developed system and analysis requirements. The LTAS.NET program is written in Microsoft Visual Studio.NET using a SQL Server database engine. Statistical methods include the use of (indirectly) standardized mortality ratios, (directly) standardized rate ratios, confidence intervals based on Poisson and exact methods, and the Rothman trend test for analyses of linear exposure-response associations. Comprehensive software testing strategies (including algorithms for person-time stratification and statistical calculations) were employed in the development of LTAS.NET.
RESULTS: The LTAS.NET program allows for simultaneous stratification and analysis of multiple exposure variables. Time-dependent and fixed user-defined variables, and globally defined temporal variables, can be incorporated. The import, stratification and results reporting options are highly flexible. LTAS.NET supports the use of exposure lags and consideration of active and inactive (working) person-time. Users may export stratified event and person-time data for use in Poisson regression modeling software.
CONCLUSION: The NIOSH LTAS.NET incorporates a number of methodological improvements that should facilitate more complex life table analysis of occupational cohort data than was possible in PC-LTAS. NIOSH plans to release LTAS.NET to the public in the future.

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TENTH REVISION MORTALITY RATES AND NIOSH LIFE TABLE ANALYSIS

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PURPOSE: The NIOSH Life Table Analysis System for Personal Computers (PC LTAS) was recently updated to reflect changes in the newly adopted Tenth Revision of the International Classification of Disease (ICD-10).
METHODS: Previously available only through 1998, we recently updated all reference death rate files for the United States, states and counties. These can be utilized as internal or external reference populations. Tenth revision causes of death were added after review for compatibility with PC LTAS death categories for prior ICD revisions 5 through 9.
RESULTS: Several categories were revised to accommodate changes in medical nomenclature including mesothelioma, cancer of the pleura and liver, non-Hodgkin's lymphoma, multiple myeloma, leukemia, unintentional injuries and others. U.S. mesothelioma deaths for 1998–1999 are compared to prior years. Testing of algorithms and limitations of the conversion process are discussed.
CONCLUSION: The complex conversion process and resulting algorithms for ICD codes, categories, and ICD revisions are described for two new U.S. rate files: 1960 through 2002 and 1940 through 2002. The PC LTAS may be used by researchers to conduct comparative mortality and morbidity analyses using person-time-at-risk for corresponding age, race, sex, and calendar time-specific reference mortality rates during the period 1940 through 2002.

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EPIDEMIOLOGICAL CRITERIA OF WORK RELATED SHOULDER DISORDERS

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PURPOSE: This study assessed the difference in possible risk factors based on differences of case definition for shoulder disorders in a working population.
METHODS: A cross-sectional study was carried out among 698 workers in 12 manufacturing and hospital/service facilities. Shoulder symptoms and physical examinations were used to define shoulder disorders. Information on individual biomechanical exposures, personal characteristics, psychosocial workload, physical component score (pcs12) and mental component score (mcs12), departmental work organizational factors were also collected. Logistic regressions, using the group with no shoulder symptoms and no physical findings as reference (n = 514), were conducted to identify the variables related to the disorder criteria of: shoulder symptoms with no physical findings (n = 78), physical findings without symptoms (n = 54) and both symptoms and positive physical findings (n = 52). All of the multivariate models were adjusted for age and sex.
RESULTS: For those with shoulder symptoms but no physical findings, female [odds ratio (OR) 1.78, 95% confidence interval (95% CI) 1.45–5.13], pcs12 above median (OR 2.33, 95%CI 1.29–4.23), mcs12 above median (OR 1.95, 95% CI 1.06–3.57) and high social support (OR 1.19, 95% CI 1.07–1.33) were related factors. For those with no symptoms but positive physical findings, age over 40 (OR 2.10, 95%CI 1.08–4.06), good general health (OR 0.73,