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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,

95% CI 0.59–0.93), machine/line work pace (OR 9.8, 95% CI 1.18–81.94), and work rotation (OR 2.3, 95% CI 1.18–4.57) were related factors. For those with both symptoms and positive physical findings, good general health (OR 0.66, 95% CI 0.54–0.80) and pcs12 above median (OR 2.54, 95% CI 1.32–4.91) were related factors.

CONCLUSION: The results suggested that case definition was critical in understanding of work related shoulder disorders.

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CORRELATES OF EMERGENCY ROOM VISITS BY UNDER-3-YEAR-OLD CHILDREN IN UNITED STATES

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PURPOSE: To describe gender, race, age of children and their mother's education, employment and depressed status associated with <3-year-old children's ER visits in the past 12 months, and its prevalence in the USA.

METHODS: Using data from National Survey of Early Childhood Health, 2000 (NSECH), we identified all the children who had one or more ER visits in the past twelve months. A multistage national random-digit-dialed sample of households was used to obtain representative sample of children under 36 months. A design-based analysis with STATA 8 was done using logistic regression, odds ratios (OR) were computed for the association of ER visits with various variables.

RESULTS: The overall prevalence of one or more ER visits in the past 12 months was 36.4% and 95% Confidence Interval (CI) was 33.5 – 39.3% (n = 2068). In females prevalence was 33.9% (95% CI 29.8 – 38.1), while in males prevalence was 38.8% (95% CI 34.7 – 42.8). No statistically significant association was observed between children's gender or age and ER visits. While compared to Whites, African-American children were more likely to have visited ER in the past 12 months OR 1.7 (95% CI 1.27 – 2.26). Educational attainment of mothers was assessed in terms of less than high school, high school, or more than high school. Compared to mothers with less than high school education, children of mothers with more than high school education were less likely to have visited ER in the past 12 months (OR 0.6, 95% CI 0.41 – 0.84). While mothers employment status was not found to be statistically significant to ER visits. Compared to mothers who reported feeling "downhearted/blue" as either little or none of the time during the last month, children of mothers who reported feeling this way as either some or all of the time were more likely to have visited ER in the past 12 months (OR 1.4, 95% CI 1.05 – 1.9).

CONCLUSION: African-American mothers with less than high school education and who were feeling downhearted or blue in the past thirty days were more likely to have had their under-3-year-old child visit Emergency Room one or more times during the past twelve months.

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CHARACTERISTICS OF CHILDREN WITH AUTISM SPECTRUM DISORDERS IN SOUTH CAROLINA

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PURPOSE: The purpose of this study was to determine the characteristics of children with Autism Spectrum Disorders (ASDs) in South Carolina (SC). ASDs are defined to include Autism, Asperger Disorder, and Pervasive Developmental Disorder–Not Otherwise Specified (PDD–NOS).

METHODS: The study area consisted of the eastern half of SC (23 counties), and is part of a larger CDC-funded surveillance network of 16 sites in 18 states. The clinical, medical, and educational records of children who were born in the year 1992 were reviewed and abstracted for the purpose of this study. Final ASD status was assigned by expert reviewers using an objective and reliable coding system.

RESULTS: Children with ASDs were 75% male, 25% female, 48% white, 39% black or African American, 12% not reported, and 1% other. Eighty-one percent of these children received school services based on the following federal disability categories: Autism, MR, Other Health Impaired, Specific Learning Disabilities, Emotional Disturbance. Eighty-eight percent of all ASD cases had a cognitive measure, and, of these, 64% had confirmed MR. Specific characteristics of ASDs presenting in greater than 10% of cases were: showing little or no interest in others (32%), movement preoccupation (17%), sensory preoccupation (15%), markedly restricted interests (15%), regression/loss of social or language skills (14%), absent or impaired imaginative play (13%), language primarily echolalia or jargon (12%). Eighty-five percent of ASD cases presented with the associated features of hyperactivity, short attention span, or impulsivity.

CONCLUSION: The ASD gender distribution in SC is consistent with that reported in other areas, and the racial distribution reflects that of the state as a whole. No single diagnostic feature emerged that reliably discriminated children with autism from other children, but this ongoing study will later address the potential clustering of features, as well as changes in ASD prevalence over time.

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EPIDEMIOLOGY OF CHILDHOOD BURN INJURIES IN NEWFOUNDLAND AND LABRADOR, CANADA

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PURPOSE: The objective of this study was to identify the epidemiologic characteristics of childhood burn injuries in the province of Newfoundland and Labrador.

METHODS: A population-based study was carried out on children aged 0–16 years who were hospitalized due to burn injuries in Newfoundland and Labrador between April 1995 and March 2001. Hospital and mortality data were obtained from the