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AGE-SPECIFIC RISK OF MEASLES IN THE UNITED STATES, 1959-1994: II. EVALUATION VIA AGE- AND TIME-SPECIFIC SEROLOGICAL STUDIES. S. J. Schrag, J.W. Glasser, W.J. Bellini, S.C. Redd, J.L. Heath (National Center for Infectious Diseases and National Immunization Program, Centers for Disease Control and Prevention (CDC), Atlanta, GA 30333).

The authors evaluated susceptibility to measles in the United States in both pre-vaccine and vaccine eras by compiling age and time-specific serological studies conducted between 1959 and 1994. The largest study, a random, cross-sectional sample of 20,000 sera collected as part of the Third National Health and Nutrition Survey, provided detailed geographical data, allowing assessment of the influence of location (e.g., rural vs urban) and scale (e.g., municipality, county or state) on serological profiles. Because studies determined the presence of measles antibody via several assays, the authors estimated the specificity and sensitivity of each relative to plaque neutralization, the gold standard for detecting measles protective antibody. For each study, these estimates were used to standardize the reported numbers of positives and negatives in each stratum. These standardized profiles were then combined via logistic regression models where age and time were represented as polynomials. Serological profiles generated by these models were compared with composite age- and time-specific disease and vaccination profiles to determine concordance. The authors minimized disparities by adjusting assumptions about waning of artificially-acquired immunity and under-reporting of disease, and then deduced age- and time-specific risks of infection that would have obtained in the absence of vaccination. These forces of infection are central parameters in a mathematical model which will investigate the prospect of future measles outbreaks and evaluate the impact of potential interventions.

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MORTALITY AMONG AN INTERNATIONAL COHORT OF PROFESSIONAL EMPLOYEES. L.D. Dell,* K.A. Mundt, L. Nagy, B. Demure, B. Liese (Applied Epidemiology, Inc., Amherst, MA 01004).

Patterns of mortality were examined among staff and retirees at a large multinational financial institution headquartered in the United States. Two-thirds of the 701 deaths identified between 1979 and 1996 occurred among North Americans and Western Europeans. Age-adjusted and gender- specific proportionate mortality ratios (PMRs) and proportionate cancer mortality ratios (PCMRs) were calculated using United States referent rates. Mortality from all cancers was 13% and 21% higher than expected for males and females, respectively, and mortality from heart disease was 6% and 13% lower. Among males, mortality was increased for transportation accidents (PMR=1.56; 95% confidence interval (CI): 0.81-2.73), human immunodeficiency virus infection (PMR=2.68; 95% CI: 1.56-4.29), prostate cancer (PCMR=1.53; 95% CI: 0.92-2.39) and lymphatic/ hematopoietic cancers (PCMR=1.89; 95% CI: 1.19-2.83). Among females, mortality was increased for transportation accidents (PMR=2.28; 95% CI: 1.09-4.20), breast cancer (PCMR=2.00; 95% CI: 1.40- 2.77) and lymphatic/ hematopoietic cancers (PCMR=1.53; 95% CI: 0.73-2.82). These results are compatible with, but cannot demonstrate, a likely healthy worker effect, due to incomplete death ascertainment. Further, lack of nation-specific reference rates may have confounded estimates. Nevertheless, these results possibly reflect aspects of this work environment, such as frequent international travel, as well as lifestyle and cultural factors. Rarely are mortality patterns for professional cohorts studied, and rarer yet for professionals representing many nationalities. Challenges associated with conducting such studies include enumerating the cohort, ascertaining vital status, and selecting an appropriate referent group.

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MORTALITY PATTERNS AMONG THE INTERNATIONAL UNION OF BRICKLAYERS AND ALLIED CRAFTSMEN (IUBAC) 1986-1991. J. Salg,* T. Alterman (National Institute for Occupational Safety and Health, Cincinnati, OH 45226).

This national study evaluates the mortality of 10,400 members of the International Union of Bricklayers and Allied Craftsmen for the period 1986-1991. Age-, gender-, and race-specific proportionate mortality ratios (PMRs) and proportionate cancer mortality ratios (PCMRs) were computed using the U.S. population for comparison. For deceased white males, significantly elevated mortality ratios (two sided Poisson, p=< .01) were observed for malignant neoplasm of the trachea, bronchus, and lung (PMR=1.37); emphysema (PMR=1.27); pneumoconiosis (PMR=1.17); and asbestosis (PMR=5.50). A similar pattern was observed for nonwhite males. Results support previous reports of an excess of respiratory cancer possibly due to cement dust, asbestos, and silica. Unlike for other construction trades, increased risk for deaths due to accidents and unintentional injuries (e.g. falls, motor vehicle accidents, electrocutions) were not observed. There were too few females for calculation of stable estimates (n=3). There are an estimated 188,823 brick masons and stone masons employed annually in the U.S. Data from the National Health Interview Survey (1987-1990) estimate smoking prevalence to be approximately 52% among these workers. Clearly smoking cessation programs and education regarding hazards are needed. Additional preventive action minimizing asbestos and other exposures is needed.

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END-STAGE RENAL DISEASE AMONG SILICA-EXPOSED CERAMIC WORKERS. E. Rapiti, A. Sperati, M. Miceli, F. Forastiere,* D. Di Lallo, D. Goldsmith (Department of Epidemiology, Regional Health Authority. Rome, Italy).

Subclinical signs of nephrotoxicity have been detected among silica exposed subjects and silicotics. Epidemiologic evidence of the association between silica inhalation and renal diseases is modest but suggestive. The present investigation was specifically designed to evaluate whether ceramic workers experience an excess of end-stage renal disease. On the basis of a health surveillance program, a cohort of 2980 male ceramic workers were enrolled during from 1974-1991 in Civita-castellana, Italy. For each worker, employment and smoking histories and X-rays were available. Vital status was ascertained for the cohort, and all 2879 men alive as of June 1994 were searched for a match in the Regional End-Stage Renal Diseases registry, which records (since June, 1994) all patients in dialysis treatment. Expected number of prevalent cases from the cohort were computed by applying the regional kidney disease rates by the age distribution of the cohort. A total of 6 cases was detected, 1.94 expected (O/E=3.09; ~95%CI = 1.32, 7.05). The excess risk was present among non-smokers (O=2; O/E=4.25) and smokers (O=4; O/E=2.72), as well as among nonsilicotic (O=3; O/E=2.44) and silicotic workers (O=3; O/E=4.34). The risk was higher among subjects with <20 years since first employment than among those employed >20 years. These results provide further evidence that exposure to silica dust among ceramic workers is associated with nephrotoxic effects, and that additional research is needed to characterize the risks among other types of silica-exposed workers.

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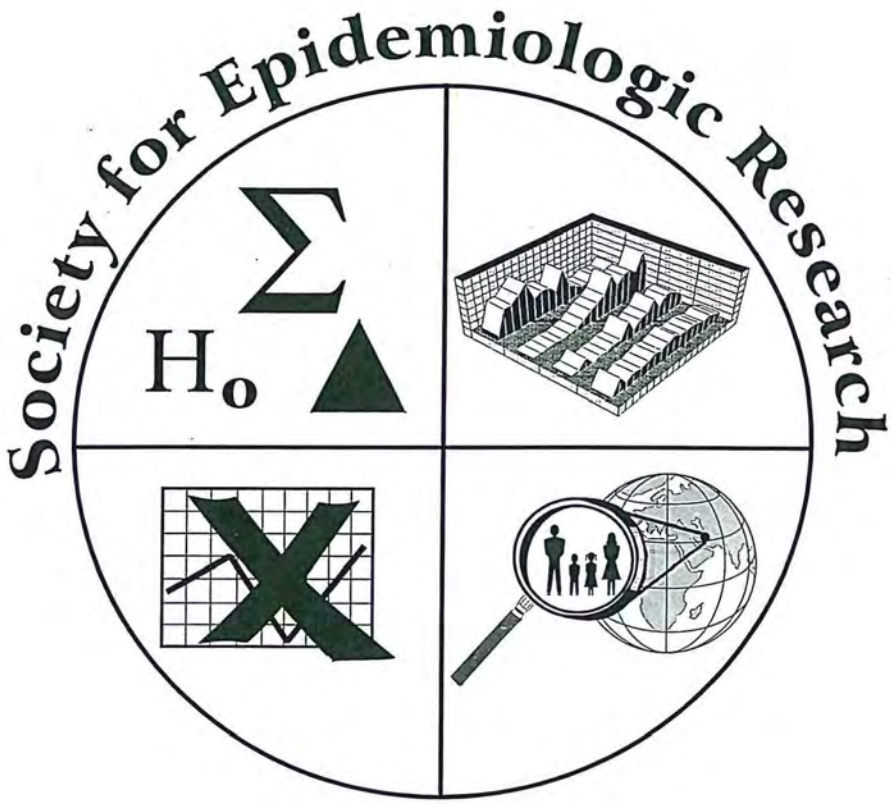
ISSN 0002-9262
Printed in the U.S.A.

American Journal of EPIDEMIOLOGY

Volume 145
Number 11
June 1, 1997

Published by The Johns Hopkins University School of Hygiene and Public Health

Sponsored by the Society for Epidemiologic Research



ABSTRACTS OF THE 30TH ANNUAL MEETING EDMONTON, ALBERTA, CANADA, JUNE 12–14, 1997

Founded 1920 by W. H. Welch and W. H. Howell as the American Journal of Hygiene