PREVALENCE AND INCIDENCE OF COALWORKER'S PNEUMOCONIOSIS IN U.S. UNDERGROUND MINERS

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The 1969 Federal Coal Mine Health and Safety Act (FCMHSA) mandated that dust exposures in underground coal mines be reduced substantially from 1970 onwards (3 mg/m^3, reduced to 2 mg/m^3 in 1972 in the absence of excessive silica in the dust). To investigate whether this action has led to a reduction in occupational lung disease in coal miners, the National Institute for Occupational Safety and Health (NIOSH) has been conducting periodic epidemiologic studies. In the most recent investigation, prevalence and incidence of coalworkers' pneumoconiosis (CWP) was studies in a group (n=3, 182) of U.S. underground miners and ex-miners previously examined by NIOSH between 1970 and 1975. Chest radiographs taken between 1985 and 1988 were read by three B readers using the 1980 ILO classification of the pneumoconioses. Based on median determinations of the three readings, overall prevalence of CWP (defined for this analysis as radiologic profusion category 1/0 or greater small opacities) was 6.8%. There was a distinctly lower prevalence of CWP among miners with 15 - 19 years of underground tenure (approximately the interval between mandated reduction in dust levels and date of examination) compared to those with 20 - 24 years (who would have experienced conditions before the mandated reduction) (3.4% versus 11.7%). Consistent with findings elsewhere, greater levels of CWP were seen in high rank coal regions (10.2% for high rank versus 5.8% for other coal fields). Furthermore, miners who said they left work for health-related reasons had a CWP prevalence about twice that seen among working coal miners. Examination of incidence of CWP over the approximately 15 years of follow-up (during which time they had apparently been exposed to an average dust concentration of just over 1 mg/m^3 indicated that most (about 70%) of the CWP identified in the 1985 to 1988 survey had developed after 1970. Moreover, nine cases of severe CWP (category 2/1 or greater rounded opacities) were found to have developed over the study period from an apparently normal initial film (median determination = category 0/0. Overall, the results suggest that while federal limitation of dust may have led to a reduction in the prevalence of CWP in underground coal miners, it has not prevented all CWP from occurring.

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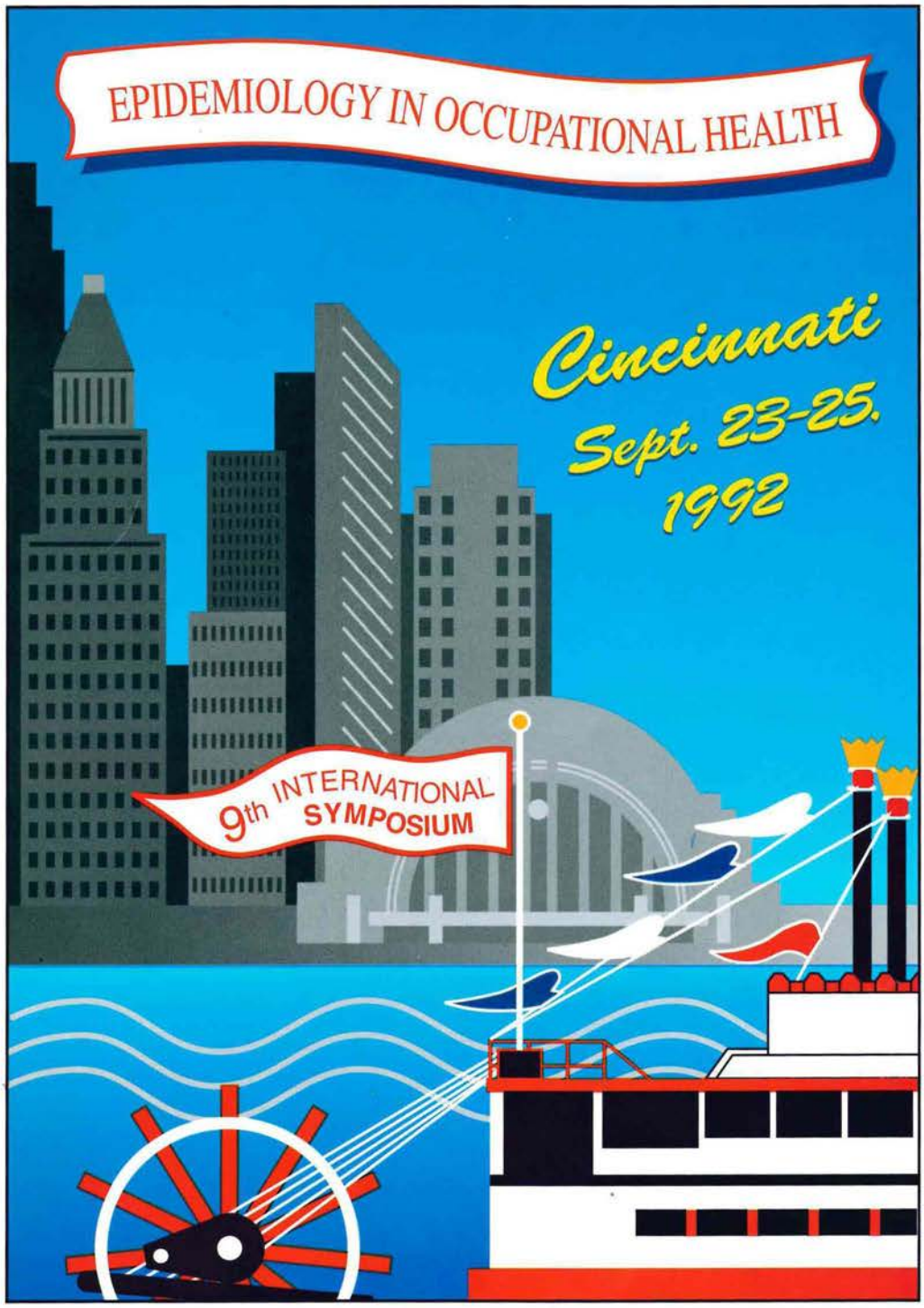

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