Sedentary Lifestyle — Continued

approach and may be useful to public health officials as a resource for both ongoing and new health promotion programs that target sedentary lifestyle.

The current challenge is to effectively target sedentary lifestyle and subsequently reduce the risk for CHD and other chronic diseases associated with physical inactivity. Improved coordination of existing programs, new research, and expanded demonstration projects are needed to meet this challenge. The year 2000 national health objectives will provide guidance for increasing physical activity and fitness (*12*).

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Current Trends

Occupational Homicides among Women — United States, 1980–1985

In 1985, CDC's National Institute for Occupational Safety and Health (NIOSH) initiated the National Traumatic Occupational Fatality (NTOF) project, which provides surveillance of work-related traumatic deaths using data from death certificates (*1*). During 1980–1985, NTOF indicated that an estimated 7000 fatal work-related injuries occurred each year; >13% of these deaths resulted from homicide (defined as death resulting from injury purposefully inflicted by another person). Among U.S. working women, who represent 47% of the U.S. workforce, homicide was a leading manner of

Homicides — Continued

death from occupational trauma, accounting for 42% of fatal injuries at work. Among men, 12% of occupational fatalities were homicides. This report presents information on the number and rate of homicides among women at work during 1980–1985.

During 1980–1985, NTOF records* from 46 states† and the District of Columbia identified 950 female homicide victims (mean: 158 per year). The 6-year average annual workplace homicide rate was 4.0 deaths per million working women, with a high of 4.8 per million in 1980 and a low of 3.6 per million in 1985. Rates for other years were: 1981, 4.4 per million; 1982, 4.4 per million; 1983, 3.7 per million; and 1984, 3.6 per million.

Victims were 16–93 years of age (mean: 38 years), accounting for 25,787 years of potential life lost before age 65 (YPLL) (an average of 27 YPLL per woman). Women aged 20–34 years accounted for the largest proportion (46%) of victims, with homicide rates of 4.5 deaths per million working women aged 20–24 years and 4.3 deaths per million working women aged 25–34 years. Women ≥65 years of age had the highest age-specific homicide rate (an average annual rate of 11.3 deaths per million working women). The average annual workplace homicide rate for white women was 3.7 deaths per million working women; the rates for black women and women of other races were 6.3 and 7.4 deaths per million working women, respectively. The rate for women of other races was based on small numbers (48 fatalities). Forty-four (92%) of these women were Asian; 22 owned, managed, or worked in retail food establishments such as markets, groceries, and bakeries.

The most common cause of death was assault by firearms: 609 (64%) women died from gunshot wounds. In addition, 181 (19%) women died from stabbings and slashings; 69 (7%) from asphyxiation; 57 (6%) from blunt force injuries; and 34 (4%) from fires, explosions, motor vehicle crashes, poisonings, sexual assaults, or other causes. Gunshot wounds were the most frequent cause of death for women in all age groups from 25 to 54 years of age; in contrast, stabbings and other injuries involving physical contact (e.g., asphyxiation or blunt force trauma) were more common among women ≥65 years of age.

Three hundred eighty-nine (41%) of the women were employed in retail trade; the annual homicide rate in this industry was 8.3 per million working women. In comparison, although 186 (20%) of the victims were employed in service industries, the service sector homicide rate was 1.9 deaths per million working women per year. Six hundred seventy-five (71%) of the victims were employed in one of four occupational categories: sales personnel (179 [19%]); clerical workers (172 [18%]); service employees, which includes public safety employees, (172 [18%]); and executives/managers/administrators, which includes many self-employed women, (152 [16%]).

The mean number of homicides per month (based on the mean number of cases per day each month), peaked from December through March and, to a lesser extent,

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*The NTOF database contains information from death certificates provided by the 50 states and the District of Columbia that meet the following criteria: 1) death was related to external causes (*International Classification of Diseases, Ninth Revision,* rubrics E800–E999), 2) the decedent was ≥16 years of age, and 3) the injury occurred at work.

†No information on workplace homicides was included in the NTOF data base from Louisiana, Nebraska, New York, and Oklahoma because, when these data were collected, each had death certification procedures that precluded obtaining this information.

Homicides — Continued

during July and August. Of the 680 cases for which hour of injury was reported, 69% occurred from 3 p.m. to 7 a.m.; fatal injuries most frequently occurred from 4 p.m. to 5 p.m.

Reported by: Div of Safety Research, National Institute for Occupational Safety and Health, CDC.

Editorial Note: The U.S. Department of Justice (*2*) and CDC's National Center for Health Statistics maintain overall information on homicides. However, this analysis of NTOF data represents a comprehensive attempt to identify work-related homicides. NTOF data is affected by the quality of death certificate information, which is obtained from next-of-kin, mortuary personnel, and certifying authorities (e.g., physicians, medical examiners, and/or coroners) and may vary in accuracy (*3*). Case ascertainment through NTOF is also affected by state reporting practices and data automation and retrieval procedures. Between 67% and 88% of all traumatic occupational fatalities can be identified through death certificates (*4*). Despite these limitations, NTOF data are useful for this preliminary characterization of homicide victims at the workplace.

The workplace homicide rate for women identified through NTOF is approximately 5% of the general homicide rate for U.S. women (79 per million women) (*5*). Data from the Federal Bureau of Investigation indicate that 42% of female homicide victims in the United States are aged 20–34 years (*5*), and NTOF data are comparable for workplace homicide. The NTOF findings extend the results of studies of fatal occupational trauma in Texas (*6,7*) and California (*8*), where homicide was a leading manner of death among working women and the highest workplace homicide rates for women occurred in those ≥65 years of age. The higher homicide rate for older women in Texas was interpreted as indicating that older women were more vulnerable targets and were less likely to survive traumatic assault, not as an artifact of underenumeration of working women in the oldest age group (*7*).

Race-specific workplace homicide rates differ from overall U.S. patterns. Nationally, black women have a substantially higher homicide rate than white women, with a rate ratio of 3.8 (*9*). In the workplace, black women remain at greater risk for homicide than white women, but the difference is less marked, with a rate ratio of 1.8.

Finally, the frequency of firearm involvement in the deaths of these women mirrors the national homicide pattern. Overall, the proportion of U.S. homicides caused by gunshot wounds ranges from 39% to 75%, depending on the region of the country (*5*); the NTOF data indicate similar proportions for workplace homicides, with parallel regional variation.

Other studies of violent occupational crime have found a greater risk for homicide in jobs with frequent contact with the public and/or the exchange of money (*7,8,10,11*). Effective training programs in conflict resolution and nonviolent response exist (*9,12,13*) and have been implemented in some retail settings (*13*). Additional risk-reduction strategies such as using locked drop-safes, posting signs indicating that only small amounts of cash are kept in the cash register, increasing the visibility of the work area to the general public, providing well-lit parking lots (*13*), controlling access to the premises, and, in certain settings, isolating workers behind bulletproof materials may be more widely applicable and should be carefully evaluated in these and other hazardous settings (*14*).

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Homicides — Continued

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Notices to Readers

ATSDR/National Governors' Association Report on Closed and Restricted Toxic Sites

The National Governors' Association (NGA), through a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), will release a report this month on the NGA's third biennial survey of sites closed or restricted to the public because of contamination by toxic substances. The report, "Restrictions Imposed on Contaminated Sites: A Status of State Actions" (*1*), describes the affected environmental media (i.e., land, groundwater, and surface water), types of contaminants, and nature of restrictions at 1705 sites nationwide.

The survey found that 69% of site restrictions pertained to groundwater use, particularly for drinking water supplies; 19% involved surface water contamination. Sixteen percent of the sites had both groundwater and land area contamination, and 6% were contaminated in all three media. At 741 of the groundwater sites, state agencies closed 7479 wells. Contaminants found most often in the reported groundwater sites varied by region, i.e., solvents in the industrialized northeast, pesticides and solvents in the more agricultural midwest, and ethylene dibromide (a grain fumigant) in the agricultural south.

Organic chemical pollution was found at 1306 (77%) of the 1705 sites; inorganic chemicals, at 618 (36%); petroleum products, at 163 (10%); and radionuclides, at 60 (4%). The five most common contaminants were trichloroethylene (221 sites), polychlorinated biphenyls (PCBs) (193 sites), lead (157 sites), benzene (148 sites), and perchloroethylene (108 sites).

CENTERS FOR DISEASE CONTROL

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Perspectives in Disease Prevention and Health Promotion

Coronary Heart Disease Attributable to Sedentary Lifestyle — Selected States, 1988

During 1987, coronary heart disease (CHD)* accounted for 27.5% of the 2.1 million deaths in the United States (*1*). Well-documented risk factors for CHD include sedentary lifestyle, elevated serum cholesterol, cigarette smoking, hypertension, diabetes, and obesity (*2,3*). This report uses data from the 1988 Behavioral Risk Factor Surveillance System (BRFSS) and the 1976–1980 Second National Health and Nutrition Examination Survey (NHANES II) (*4*) to estimate the number of persons at risk for CHD due to sedentary lifestyle and to compare the prevalence of this risk factor with other risk factors for CHD.

The 37 state health departments participating in the BRFSS used standard questionnaires and methods to conduct monthly random-digit–dialed telephone interviews of adults ≥18 years of age (*5*). For the BRFSS, sedentary lifestyle was defined as no physical activity reported or irregular physical activity reported (i.e., fewer than three times per week and/or <20 minutes per session). NHANES II, a nationwide probability sample of 28,000 persons aged 6 months to 74 years, described the relationship between age and cholesterol levels for men and women aged 20–57 years; because this sample used direct serum measurement instead of self-report to record cholesterol levels, it provides the best national estimate for this CHD risk factor.

In the BRFSS survey, sedentary lifestyle was the most prevalent (58%) modifiable risk factor for CHD reported, followed by cigarette smoking, 25%; obesity, 22%; hypertension, 17%; and diabetes, 5% (Figure 1). Based on NHANES II, the estimate for serum cholesterol levels ≥200 mg/dL among persons 20–74 years of age was 31%.

To reduce the burden of CHD attributable to sedentary lifestyle, 13 states† are promoting physical activity as part of comprehensive cardiovascular disease prevention programs. Based on a median adjusted§ relative risk of 1.9 (*2*) (i.e., sedentary persons are approximately twice as likely as physically active persons to die from

International Classification of Diseases, Ninth Revision (ICD-9), rubrics 410–414, 429.2.
†Alabama, Colorado, Florida, Maine, Missouri, New York, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Washington, and West Virginia.
§Adjusted for other selected known risk factors for CHD.