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Occupational injuries and fatalities among health care workers in the United States

by Nancy A Stout, EdD[1]

In 1990, 9.5 million people were employed in the health care industry, a steady increase from the 7.5 million in 1981 and the 7.9 million in 1985 (1). This particular industrial sector encompasses workers in a variety of jobs and in diverse employment settings (eg, hospitals, nursing homes, private offices, laboratories). In addition to patient care workers, the health care industry includes food service workers, housekeeping and maintenance workers, management and administrative personnel, groundskeepers, dietitians, technicians, teachers, and the like. Health care workers are subject to many kinds of work-related hazards and exposures that result in several types of injuries.

Although there have been some studies of specific types of injuries to health workers (eg, back injuries, needle sticks) and of specific health care occupations (eg, nurses), few studies have examined injuries in the health care industry in general. No national data on the injury rates of workers in the health care industry provide information about the injured worker or the injury circumstances.

This study examined both fatal and nonfatal injuries nationwide among three components of the health care industry, namely, hospitals, nursing homes and personal care facilities, and offices of health practitioners.

Material and methods

For an overview of the magnitude and types of injuries sustained by health care workers, injury data from the Supplementary Data System (SDS) of the Bureau of Labor Statistics were examined. The SDS comprises information from first reports of workers' compensation claims filed in about 30 states (2). There is considerable variation between states in both reporting requirements and coverage. For the purpose of this analysis, SDS data were compiled for 18 participating states with similar reporting requirements — where an injury is defined as one which requires medical treatment or one lost workday.

The numbers and rates of injuries were calculated for the composite data from the 18 states for the five-year period 1980—1984. With the use of *County Business Patterns* (3) data for the same 18 states as a denominator, injury rates were calculated as compensation claims per 100 workers. The numbers of injuries were then adjusted for the states not included in the analysis to estimate the annual number of injuries nationwide in each industry. Because public employees are not consistently included in the injury data source, injury rates were calculated for the private sector only. Distributions of occupations and of injury characteristics are also presented. Fatal occupational injuries were identified from the National Traumatic Occupational Fatality data base, which comprises information obtained from death certificates of United States residents who died as a result of a work-related injury (4). Fatality rates are presented as the national annual average rates per 100 000 workers for the six-year period 1980—1985, using *County Business Patterns* (3) data as the denominator. Fatal injuries are also described by cause of death [according to the external causes of death (E codes) of the International Classification of Diseases, ninth revision] and by occupation within these three sectors of the health care industry.

Results

Hospital employees. In an examination of the SDS workers' compensation data for 1980—1984, an injury incidence rate of 3.2 per 100 workers was determined from compensation claims of hospital employees in the private sector in comparison with the overall health care industry rate of 2.8 per 100. The occupations of the employees most frequently injured were registered nurses (20%), nurse's aides (17%), practical nurses (9%), cleaners (6%), food service workers (5%), and health aides (4%). The most frequent injury causes were bodily reaction or overexertion (43%), being struck by an object (24%), falls (14%), and contact with radiation or caustic or toxic substances (6%). The injury outcomes were most frequently described as sprains or strains (48%), followed by cut or laceration (14%), contusion (11%), and fracture (5%).

During 1980—1985, 141 hospital workers suffered fatal work injuries, for a fatality rate of 0.8 per 100 000 workers. The most frequent causes of death among hospital workers were motor vehicle traffic crashes (20%), homicides (19%), aircraft crashes (17%), sui-

[1] Division of Safety Research, National Institute for Occupational Safety and Health, Morgantown, West Virginia, United States.

Correspondence to: Dr NA Stout, Division of Safety Research, National Institute for Occupational Safety and Health, 944 Chestnut Ridge Road, Morgantown, WV 26505, USA.

cides at work (11%), and falls (9%). Registered nurses (22%) and physicians (15%) were the most frequently listed occupations, followed by technicians (6%), craftsman (5%), nurse's aides (5%), and salesmen (5%).

Employees in nursing homes and personal care facilities. The SDS data showed an estimated 60 000 injuries each year in nursing homes and personal care facilities, or nearly 6 per 100 workers. Nurse's aides were injured more often than any other occupational group (64%), followed by practical nurses (4%), cooks (4%), and housekeepers (4%). The most common injuries were those due to overexertion (54% or about 3 in 100 workers). Injuries caused by being struck by an object accounted for 20% of the cases, and 15% were due to falls. Most injuries were sprains or strains (59%), followed by contusions (11%), and cuts or lacerations (7%). Seventeen nursing home workers died from injuries on the job during 1980—1985, for a fatality rate of 0.3 per 100 000 workers. Fatal work injuries occurred the most frequently among nurse's aides (29%) and managers and administrators (18%). Homicide was the leading cause of traumatic occupational death among these workers (25%), followed by suicides (19%), motor vehicle traffic fatalities (19%), and falls (12.5%).

Employees in offices of health practitioners. During 1980—1984, the SDS data indicate that approximately 1000 workers in health practitioner offices were injured each year. The injury incidence rate was less than 1 (ie, 0.6) per 100 workers in this industry. Registered nurses reported the greatest frequency of injuries (9%), followed by dental assistants (9%), nurse's aides (6%), and receptionists (6%). As in the other sectors of the health care industry, employees of practitioners' offices experienced injuries due to overexertion (33%) more frequently than other types of injuries. Another 28% was due to being struck by an object, and 17% was attributable to falls. Sprains and strains again accounted for the greatest number of compensation claims (38%), followed by cuts or lacerations (17%), contusions (8%), and fractures (6%). From 1980 through 1985, 28 employees in offices of health practitioners died from work-related injuries, or 0.3 per 100 000 workers in this industry. Physicians (54%) and dentists (35%) were the most frequent victims. Unlike in other health care services, the most common traumatic occupational fatalities were suicides at work (40%) followed by homicides (28%), aircraft crashes (8%), and accidental poisonings (8%).

Discussion

These data indicate that of all United States health care workers, employees of nursing and personal care facilities are at the highest risk of job-related injuries. Hospital workers are at the highest risk of suffering a fatal injury. The potential for work-related injuries or fatalities for employees in health practitioners' offices is comparatively low.

Injuries and their causes are similar among these three sectors of the health care industry. In the entire health care industry, sprains and strains due to overexertion are more frequent than any other type of work-related injury, and the occupations of workers the most frequently injured are nurse's aides, registered nurses, licensed practical nurses, and cleaners.

Fatal occupational injuries showed a different pattern among health care workers than did nonfatal injuries. The leading causes of death from work-related injury in the health care industry overall were homicide (22%), motor vehicle traffic crashes (17%), suicides (16%), and aircraft crashes (14%). Physicians were more likely to die from work injuries (19%) than other occupational groups, followed by registered nurses (17%), nurse's aides (6%), and dentists (5%).

Not unexpectedly, this analysis suggests that efforts to prevent injury should focus on overexertion and sprain and strain injuries among patient care workers, particularly in nursing homes. These findings are consistent with the results of previous research and emphasize the need for increased injury control in nursing home settings (5, 6).

Occupations in the health care industry that do not involve direct patient contact are also at risk of work injury. Housekeeping, maintenance, and food preparation workers are among the five occupational groups with the highest frequency of injury in the health care industry and also deserve attention from the occupational safety community.

These data also suggest that efforts to prevent fatal occupational injuries among health care workers in the United States must have a different focus than for nonfatal injuries. Fatal injury prevention should target physicians and registered nurses and should emphasize the prevention of intentional deaths.

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