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Fatal Occupational Injuries—United States, 1980-1997

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1 table omitted

CDC MONITORS DEATHS FROM OCCUPAtional injuries through the National Traumatic Occupational Fatalities (NTOF) surveillance system.[1,2] This report provides an overview of traumatic occupational deaths among civilian workers from NTOF from 1980 through 1997, the most recent year for which data are available. The data presented in this report indicate a decrease in occupational deaths over this period with mining, agriculture/forestry/fishing, and construction having the highest death rates; motor-vehicle crashes were the leading cause of injury-related deaths for U.S. workers. State health departments and others involved in prevention of occupational injuries can use the data to prioritize intervention programs.

NTOF contains information obtained from death certificates from the vital statistics reporting units in the 50 states, New York City, and the District of Columbia.[1*] Crude death rates per 100,000 workers were calculated as the number of deaths among civilian workers for each year divided by the number of employed civilians for each year. Employment estimates for rate calculations were obtained from the Bureau of Labor Statistics' (BLS) Current Population Survey (CPS), a population-based, household-sample survey of the civilian, noninstitutionalized population. These data were extracted from the BLS *Employment and Earnings*† and the CPS monthly microdata files.[3] Employment data used for rate calculations were based on the number of workers.

National Estimates

During 1980-1997, 103,945 civilian workers died in the United States from occupational injuries, an average of 16 work-related deaths per day. The annual number of traumatic occupational deaths declined 28,% from 7343 in 1980 to 5285 in 1997. The rate for occupational injury deaths for all workers decreased 45,% from 7.4 per 100,000 workers in 1980 to 4.1 in 1997.

Males accounted for 93% of all deaths, with a death rate approximately 11 times that of females. Although 85% of civilian workers who died were white, blacks had a higher fatality rate (5.6 per 100,000 workers) than whites (5.0). Workers aged 25-34 years accounted for the largest number of occupational injury deaths, and workers aged ≥65 years had the highest age-specific death rate.

Since 1980, motor-vehicle crashes accounted for 24% of deaths and were the leading cause of injury-related death for U.S. workers. In 1990, homicides became the second leading cause of occupational injury deaths (14%), surpassing machine-related deaths (13%). Deaths caused by falls and electrocutions accounted for 10% and 7% of work-related deaths, respectively.

The industries in which the largest numbers of deaths occurred were construction (19,179 deaths [19% of reported deaths]), transportation/communications/public utilities (17,489 [17%]), and manufacturing (15,490 [15%]). Industries with the highest death rates were mining (30 per 100,000 workers), agriculture/forestry/fishing (19), and construction (15).

The risk for specific causes of death varied by industry. Machinery was the leading cause of death in agriculture/forestry/fishing, mining, and manufacturing. Falls were the most prevalent in construction, followed by motor-vehicle crashes, and machinery. Motor-vehicle crashes were the leading cause of death in transportation/communications/public utilities, wholesale trade, and public administration. Homicide was the leading cause of death in retail trade, finance/insurance/real estate, and services.

The occupation categories in which the largest number of deaths occurred were precision production/craft/repairers (21,412 deaths [21%]), transportation/material movers (18,251 [18%]), and farmers/foresters/fishers (13,597 [13%]). Occupation categories with the highest death rates were farmers/foresters/fishers (21.4 per 100,000 workers), transportation/material movers (21.3), and handlers/equipment cleaners/helpers/laborers (13.4).

State Estimates

The greatest number of fatal occupational injuries occurred in California (10,712 deaths [10%]), Texas (10,294 [10%]), Florida (6,269 [6%]), Illinois (4,582 [4%]), and Pennsylvania (4,402 [4%]). Fatal occupational injury rates were highest in Alaska (22.7 per 100,000 workers), Wyoming (15.8), Montana (11.8), Idaho (10.4), and West Virginia (10.1). The leading causes of death varied for each of these five states. For example, water transport accounted for the most deaths in Alaska (33%), compared with approximately 2% for the United States, and air transport was the second or third leading cause of death in four of the five states, compared with being the seventh overall cause of death nationally.

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

CDC Editorial Note: The findings in this report indicate a general decrease during 1980-1997 in the annual number of deaths and the annual rates of occupational deaths in the United States. In addition, the leading causes of death have changed through the 1990s. Although surveillance data cannot identify reasons for these temporal trends, changes in the workplace (e.g., increased and better targeted regula-

tions, improved hazard awareness, new technology, and mechanization) are possible factors.[4] In addition, changes in the economy, the industrial mix, and the distribution of the workforce[4] and improvements in acute trauma care for injured workers may have contributed to these decreases.

NTOF is the only surveillance system with comprehensive fatal occupational injury data for the United States during the 1980s. NTOF provides data for examining temporal trends and analyzing data by cause of death and industry, both useful tools for identifying injury patterns and suggesting targets for interventions.

The findings in this report are subject to at least four limitations. First, only 67%-90% of all fatal occupational injuries can be identified using death certificates as the source of case identification.[1] Second, standardized guidelines for coding the "Injury at Work?" item on the death certificates were introduced in 1992;‡ as a result, earlier application of this item may have been inconsistently applied. Third, information derived solely from death certificates lacks the level of detail found in multisource databases, resulting in increased potential for misclassification. Finally, the rates presented in this report do not reflect the difference in exposure for groups that commonly work <40 hours per week (e.g., youth and older workers).

In 1992, BLS began collecting data on work-related deaths from all 50 states and the District of Columbia through the Census of Fatal Occupational Injuries (CFOI), a multisource surveillance system that incorporates information from various sources, including death certificates, workers' compensation reports, medical examiner and coroner reports, news media, motor-vehicle incident reports, information from other federal agencies, and follow-up questionnaires.[5] CFOI uses multiple data sources and requires that work-relatedness be substantiated by at least two of these sources, leading to improvements in both case ascertainment and data accuracy. NTOF and CFOI identified similar patterns from 1992 through 1997, the years for which data collection for the two systems overlapped; however, NTOF identified 32,368 deaths, compared with 37,875 by CFOI.[6]

One of the national health objectives for 2010 is to reduce the rate of work-related injury death to 3.2 per 100,000 workers (objective 20-1a).[7] Surveillance data, such as those gathered through NTOF and CFOI, provide the basis for strategies to prevent traumatic work-related deaths by profiling high-risk worker groups and leading causes of death. This information can be used to develop targeted injury-prevention efforts. Additional information about NTOF is available from NIOSH, telephone (800) 356-4674 or (513) 533-8328; or at http://www.cdc.gov/niosh/homepage.html.

REFERENCES

1. Jenkins EL, Kisner SM, Fosbroke DE, at al. Fatal Injuries to workers in the United States, 1980-1989: a decade of surveillance, national and state profiles. Cincinnati, Ohio: US Department of Health and Human Services, Public Health Services, CDC, 1993; DHHS publication no. (NIOSH)93-108S.
2. CDC. Fatal occupational injuries—United States, 1980-1994. MMWR 1998;47:297-302.
3. Bureau of Labor Statistics. BLS handbook of methods. Washington, DC: US Department of Labor, Bureau of Labor Statistics, 1992. (BLS Bulletin 2414).
4. Stout NA, Jenkins EL, Pizatella TJ. Occupational injury mortality rates in the United States: changes from 1980 to 1989. Am J Public Health 1996;86:73-7.
5. Bureau of Labor Statistics. Fatal workplace injuries in 1992: a collection of data and analysis. Washington, DC: US Department of Labor, Bureau of Labor Statistics, 1994. (Report 870).
6. Bureau of Labor Statistics. Fatal workplace injuries in 1997: a collection of data and analysis. Washington, DC: US Department of Labor, Bureau of Labor Statistics, 1999. (Report 934).
7. US Department of Health and Human Services. Healthy people 2010 (conference ed, 2 vols). Washington, DC: US Department of Health and Human Services, 2000.

*Inclusion criteria for death certificate submission to the NTOF database include (1) age ≥16 years; (2) external cause of death (International Classification of Diseases, Ninth Revision, codes E800-E999); and (3) "Injury at Work?" item marked positive by the certifier.

†Employment estimates were based on household data annual averages from the BLS monthly publications of the Employment and Earnings. These estimates are extracted from each of the January issues for 1980-1997.

‡In 1992, national guidelines for completing the "Injury at Work?" item were developed and disseminated by the Association for Vital Records and Health Statistics (now the National Association for Public Health Statistics and Information Systems), NIOSH, the National Center for Health Statistics, and the National Center for Environmental Health.[1]

Baler and Compactor–Related Deaths in the Workplace—United States, 1992-2000

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EQUIPMENT THAT COMPACTS AND BALES loose solid waste materials into denser, more easily transported units is common in refuse disposal and recycling and is used routinely at recycling centers, manufacturing facilities, and retail and wholesale stores to compress paper, textiles, metals, plastic, and other material.* Persons operating balers and compactors can become caught by the powered rams of the compression chambers while using these machines. Risk factors resulting from these incidents have been identified through surveillance findings and results of investigations conducted by CDC's National Institute for Occupational Safety and Health (NIOSH) Fatality Assessment and Control Evaluation (FACE) program† and the Bureau of Labor Statistics Census of Fatal Occupational Injuries (CFOI),‡ a nationwide multisource reporting system for occupational deaths. This report describes the results of two baler and compactor-related investigations conducted during 1992-2000, summarizes surveillance data from 1992 through 1998, which indicated that some employers and workers may have been unaware of the hazards of operating or working near compacting and baling equipment, and suggests safety recommendations for preventing future incidents.

Case Reports

Case 1. In July 2000, a 16-year-old produce market worker died from crushing injuries when he was caught in the vertical downstroke baler he was operating. He was working alone in the market's basement and was using the

baler to crush cardboard boxes when he was caught by the machine's ram. Investigations determined that the machine's safety interlock§ had been bypassed, allowing the machine to operate with the loading door open. The worker may have reached into the compression chamber while the machine was operating and was caught by the ram during its downstroke.

Case 2. In May 1997, a 34-year-old paper products worker died after falling into an operating baler. The worker and a co-worker were loading scrap paper into the baler through a belt conveyor when the material jammed in the baler's feed chute. The co-worker shut down the conveyor but not the baler's automatic controls, and the worker ascended to a platform between the end of the conveyor and the feed chute. When he leaned over the platform rail to clear the jam, he fell through the feed chute and into the compression chamber. His presence tripped the automatic control sensor, and the baler's ram was activated.

Surveillance Data

CFOI identified 34 deaths related to compactors and balers during 1992-1998; 29 (85%) occurred when a worker was caught or crushed by the compacting ram of the machine. Decedents were age 17-72 years (median: 37 years): six were <25 years, 10 were 25-34 years, nine were 35-44 years, and nine were ≥45 years. Twelve worked in the wholesale trade industry; nine in manufacturing; eight in transportation/communications/public utilities; and the remainder in retail and services industries. Six deaths occurred during the processing of cardboard; five workers were processing paper; five were processing trash; and five were processing cans, scrap metal, cotton, or plastic wrap. For eight deaths, the material being processed was not specified.

During 1992-2000, FACE received 19 reports of baler and compactor-related deaths from 13 states (four in Missouri, three in New Jersey, two in Massachusetts, and one each in California, Colorado, Iowa, Nebraska, New York, North Carolina, South Carolina, Tennessee, Texas, and Washington). All 19 were men, aged 16-52 years (median: 36 years), who sustained crushing or amputation injuries from the compacting ram after they reached into or entered the compression chamber of an operating machine. Injury-related activities were identified through case reports; reaching or falling into the compression chamber injured 12 persons, the presence of the worker in the compression chamber automatically activating the ram injured six, clearing jammed material from an operating machine injured five, co-workers activating the ram without knowing that the worker was inside the compression chamber injured three, and attempting to retrieve unbalable material from an operating machine injured two; some incidents involved more than one factor.

Field investigations that identified injury risks were conducted for 11 incidents. Nine involved failure to implement effective power supply shutdown and ram pressure dissipation procedures, six involved failure to follow standard procedures for clearing material jams, six involved attempting to clear material jams without shutting down the machine's automatic controls, five involved operating machines with bypassed or defective safety interlocks, and three involved workers' operating a machine without determining the location of co-workers.

Reported by: Fatality Assessment and Control Evaluation Program, Div of Safety Research, National Institute for Occupational Safety and Health, CDC.

CDC Editorial Note: Baling and compacting equipment is built in various sizes and configurations; however, whether the machine is a compactor or a baler, workers are exposed to similar injury risks. Both types of machines compress refuse material through the action of a powered ram that moves vertically or horizontally into and through a compression chamber. Using tons of pressure, the ram compresses the chamber contents into a small, dense unit. Balers compress and bind the material using wire or twine, and compactors compress the material into a container that is stored for later transport. Recently manufactured machines conform to American National Standards Institute specifications such as point-of-operation guards to prevent injury associated with reaching into an operating machine and interlocked control systems to interrupt or reverse the ram's motion when the compression chamber doors are opened.[1,2] However, some older machines may not have guards and interlocks.

Automatically controlled machines operate when the control system senses the presence of sufficient material to be compressed. Because ram motion may not have started or may have ceased during a jam, workers may not recognize that the machine is operational and the ram could activate inadvertently unless the power supply is disconnected and the ram pressure is dissipated. Employers may not recognize the need to standardize jam clearing procedures to include both power supply shutdown and ram pressure dissipation procedures.

The findings in this report are subject to at least five limitations. First, because of the variety of industries and circumstances in which these machines were used and the limits of surveillance for fatal injuries, this report may underestimate the number of compactor- and baler-related deaths. Second, the FACE state component receives reports of work-related deaths from only 15 states. Third, because of limited injury descriptions in CFOI compared with FACE descriptions, the exact circumstances of injury often cannot be determined. Fourth, deaths identified by FACE from 1992 through 1998 probably were included in CFOI although not necessarily identified as baler- or compactor-related; therefore, FACE and CFOI cases overlap. Finally, the number of reported cases was small, thus limiting generalizability.

On the basis of information collected from FACE investigations, the following measures are recommended

to reduce the risk for worker injury in compactors and balers: (1) employers should train workers to recognize the hazards of operating or working near balers and compactors; (2) before jams are cleared, authorized employees should verify that the machine's electrical power has been disconnected, the disconnecting device has been locked and tagged, and the ram pressure has been dissipated[3]; employers should implement appropriate power supply shutdown procedures whenever repair or maintenance is needed[4]; (3) employers should implement standard procedures for managing common events such as material jams; (4) balers and compactors should be equipped with machine guards and safety interlocks to prevent worker injury and interlocks should be designed so that they cannot be bypassed; and (5) employers should require machine operators to account for the location of coworkers before activating compactor or baler rams.

REFERENCES

1. American National Standards Institute. American national standard for equipment technology and operations for wastes and recyclable materials: baling equipment safety requirements. New York, New York: American National Standards Institute, 1997; publication no. ANSI Z245.5.

2. American National Standards Institute. American national standard for equipment technology and operations for wastes and recyclable materials: stationary compactors safety requirements. New York, New York: American National Standards Institute, 1997; publication no. ANSI Z245.2.

3. National Institute for Occupational Safety and Health. Control of scrap paper baler crushing hazards. Cincinnati, Ohio: US Department of Health and Human Services, Public Health Service, CDC, 1997; DHHS publication no. (NIOSH)97-107.

4. National Institute for Occupational Safety and Health. Preventing worker deaths from uncontrolled release of electrical, mechanical, and other types of hazardous energy. Cincinnati, Ohio: US Department of Health and Human Services, Public Health Service, CDC, 1999; DHHS publication no. (NIOSH)99-110.

*This report considers only stationary machines.

†FACE conducts fatality investigations of selected categories of cases, including machinery-related incidents, and disseminates injury prevention information. Through a series of cooperative agreements with NIOSH, 15 states maintain multisource surveillance networks to identify all traumatic occupational deaths, conduct site investigations, and disseminate prevention information.

‡CFOI is a multisource (e.g., death certificates, medical examiner/coroner reports, workers' compensation reports, and police reports) reporting system for occupational deaths implemented nationwide by the Bureau of Labor Statistics in 1992.

§A device or mechanism used to connect individual components so that the action of one part of the equipment is constrained by or dependent on another[1,2]; in general, the purpose of an interlock is to prevent or interrupt the operation of machine components under specified conditions, usually when a hazard is present. As applied to balers and compactors, the interlock prevents or interrupts movement of the compacting ram if the machine's access doors are opened while the machine is energized or in motion.

Nonfatal Occupational Injuries and Illnesses Treated in Hospital Emergency Departments—United States, 1998

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THE NATIONAL ELECTRONIC INJURY SURveillance System (NEISS) includes data about nonfatal occupational injuries and illnesses treated in U.S. hospital emergency departments (EDs). This report summarizes 1998 injury and illness estimates based on NEISS, which indicate that the magnitude and patterns of nonfatal occupational injuries and illnesses were comparable to estimates reported for 1996.[1] Younger workers continue to have the highest rates of work-related injuries and illnesses; therefore, interventions should address the health and safety needs of young workers, most of whom lack substantial experience in the work place.

In 1998, NEISS identified approximately 47,000 work-related injuries and illnesses treated in 67 EDs derived from a national stratified probability sample of all U.S. hospitals with a minimum of six beds and a 24-hour ED.* The NEISS sampling frame for work-related ED visits was updated in October 1997 based on the 1995 listing of U.S. hospitals with EDs. As a result, compared with earlier reports, the updated hospital sample had changes in the makeup of hospitals within each size stratum in the sample and the statistical weights for cases, which are used to extrapolate to national estimates.[1]

Work-related ED visits for injury or illness were identified from admissions information and ED chart review. A work-related case was defined as any injury or illness incurred by a civilian worker while working for compensation, arriving or leaving work but on the employers' premises, during transportation between locations as a part of the job (excluding commuting to or from home), doing agricultural production activities, or working as a volunteer for an organized group (e.g., volunteer fire department).[2] Military injuries, common illness cases (e.g., colds or viruses), routine drug and alcohol screening, and revisits to an ED for a previously treated injury or illness were excluded.

Employment estimates, used to calculate injury rates, were 12-month averages for 1998 Current Population Survey (CPS) data based on full-time equivalent (FTE) workers (1 FTE = 2000 hours per year).[3] CPS is a monthly household survey of the U.S. civilian, noninstitutionalized population aged ≥15 years that includes wage and salary workers, self-employed workers, part-time workers, and unpaid workers who worked ≥15 hours a week in family-operated enterprises, but excludes volunteers for organized groups. However, cases involving volunteer workers were not removed from the injury/illness estimates or rate estimates presented in this report because of difficulties in identifying these workers in the NEISS database. Injuries and illnesses to workers aged ≤14 years (0.1% of total) were included in the total injury/illness estimates but were excluded from injury/illness estimates in the rate calculations because employment data for this age group were not available.

In 1998, an estimated 3,600,000 (95% confidence interval [CI] = ± 600,000) occupational injuries and illnesses to workers of all ages were treated in EDs. The overall occupational injury and illness rate was 2.9 (95% CI = ± 0.5) per 100 FTE workers aged ≥15 years. The

injury and illness rate for males (3.4; 95% CI=±0.6) was 1.6 times the rate for females (2.1; 95% CI=±0.3). The rate was highest for younger workers and decreased with increasing age.

Workers aged 15-17 years had a particularly high rate of burns, ranging from two- to 10-fold higher than that for older workers. Burns and lacerations accounted for one half of injuries to workers aged <20 years and approximately one fourth to one third of injuries to workers aged ≥20 years.

In 1998, approximately 70% of injuries resulted in lacerations, punctures, amputations, and avulsions (27%); sprains and strains (25%); and contusions, abrasions, and hematomas (21%). Hands and fingers, the most commonly injured body parts (30%), were treated almost twice as frequently in EDs as injuries to other anatomic groups: trunk, back, and groin (18%); head and neck (17%); lower extremities (17%); and upper extremities (excluding hands and fingers) (15%).

Nearly all of the estimated 3.6 million work-related injuries and illnesses were treated in EDs and released. Approximately 60,000 (95% CI=±16,000) of these injuries/illnesses resulted in hospitalization, and an additional 18,000 (95% CI=±5,000) were transferred from the ED to another medical facility. Of hospitalized patients, 85% were males. The highest proportion of hospitalizations (35%) were the result of fractures and dislocations.

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

CDC Editorial Note: The findings in this report indicate that the number and distribution of work-related injuries/illnesses treated in an ED and the injury/illness rates, overall and by sex, were approximately equal for 1996 and 1998. These trends continue to be consistent with general patterns observed in the earliest NEISS-based national estimates of ED-treated nonfatal work-related injuries/illnesses reported for 1982.[4]

The 1996 NEISS injury estimates were based on a hospital sampling frame that used the 1985 listing of U.S. hospitals. Because of the 1997 sampling frame update and changes in procedures for correcting hospital underreporting, the previously reported estimate for 1996 of 3.3 million injuries[1] is now crudely estimated to be approximately 4% lower (3.2 million) (NIOSH and the Consumer Product Safety Commission, unpublished data, 2000). Proportional distributions for 1996 are influenced minimally by the sampling and weighting factors and are more directly comparable to 1998 estimates.

The Bureau of Labor Statistics (BLS) reported approximately 5.9 million nonfatal occupational injuries and illnesses in 1998, with an incidence rate of 6.7 injuries/illnesses per 100 FTE workers for private industry.[5] BLS excludes the self-employed, small farms, and government employees, restrictions that do not apply to the NEISS work-related injury estimates. However, NEISS estimates are restricted to ED-treated injuries and illnesses; BLS includes workplace injuries and illnesses treated in any health-care venue. If 1998 patterns of medical treatment are similar to those determined from the 1988 National Health Interview Survey (NHIS) Occupational Supplement,[1] then the 3.6 million ED-treated injuries/illnesses in NEISS represent approximately one third (34%; 95% CI=±5%†) of all U.S. work-related injuries/illnesses that required medical treatment or resulted in lost work time of more than 1 day in 1998. By crude extrapolation, approximately 10 million occupational injuries and illnesses in 1998 is probably a more comprehensive figure for the overall injury/illness burden of U.S. workers.

Workers aged 15-17 years had an injury/illness rate of 4.9 per 100 FTE in 1998. Most of these injuries in younger workers were probably related to the high proportion of youth working in services and retail trades, particularly eating establishments.[6,7] Teenagers are at particularly high risk for injuries because they frequently lack substantial work experience, safety training, and appreciation for their workplace injury risk. One of the national health objectives for 2010 is to reduce the adolescent occupational injury rate to no more than 3.4 per 100 FTE workers aged 16-17 years (objective 20-2h).[8] Effective strategies to address workplace safety issues for youth, such as those developed in community-based young worker projects in California and Massachusetts,[9] must be implemented to meet the objective.

REFERENCES

1. CDC. Surveillance for nonfatal occupational injuries treated in hospital emergency departments—United States, 1996. MMWR 1998;47:302-6.
2. Jenkins EL, Kisner SM, Fosbroke DE, et al. Fatal injuries to workers in the United States, 1980-1989: a decade of surveillance, national profile. Washington, DC: US Department of Health and Human Services, 1993.
3. Bureau of Labor Statistics. Current Population Survey microdata files for 1998. Washington, DC: US Department of Labor, Bureau of Labor Statistics, 1999.
4. Coleman PJ, Sanderson LM. Surveillance of occupational injuries treated in hospital emergency rooms—United States, 1982. MMWR 1983;32(no. S-2).
5. Bureau of Labor Statistic. Survey of occupational injuries and illnesses, 1998. Washington, DC: US Department of Labor, Bureau of Labor Statistics, 2000.
6. Hendricks KJ, Layne LA. Adolescent occupational injuries in fast food restaurants: an examination of the problem from a national perspective. J Occup Environ Med 1999;41:1146-53.
7. Layne LA, Castillo DN, Stout N, Cutlip P. Adolescent occupational injuries requiring hospital emergency department treatment: a nationally representative sample. Am J Public Health 1994;84:657-60.
8. US Department of Health and Human Services. Healthy people 2010 (conference ed, 2 vols). Washington, DC: US Department of Health and Human Services, 2000.
9. US Department of Health and Human Services. Promoting safe work for young workers: a community-based approach. Cincinnati, Ohio: US Department of Health and Human Services, 1999: DHHS publication no. 99-141.

*Through a collaboration between NIOSH and the U.S. Consumer Product Safety Commission (CPSC), work-related injury and illness information was collected without limitations by age, consumer product involvement, or type of injury event at two thirds of the 101 NEISS hospitals used by CPSC for the collection of product-related injuries.

†Percentage of the 3.1 million occupational injuries estimated for 1988 that received initial medical treatment in an ED. The 2000 NHIS is expected to provide a more up-to-date estimate of ED use for occupational injuries and may indicate that use of different medical venues has changed substantially since the 1988 survey.