Profiles in safety and health: hotels and motels

Lodging and restaurant operations reported many work-related injuries and illnesses; disabling incidents, resulting in lost worktime, rose steadily during the 1980's

"The great advantage of a hotel is that it's a refuge from home life."

—George Bernard Shaw
You Never Can Tell (1898)

John J. Kane
and
Martin E. Personick

Hotels and motels are homes away from home for business travelers and vacationers, offering both temporary lodging and relief from housekeeping chores back home. In attending to their guests and guestrooms, this Nation's hotels and motels employ about 1-1/2 million workers, most of them either preparing and serving food or cleaning rooms and otherwise maintaining grounds and premises. Working round-the-clock shifts, hotel staff face a variety of safety and health risks, such as disabling falls on slippery floors; burns from preparing hot food or using caustic laundry and cleaning compounds; and sprains from handling furniture and other heavy objects.

This article examines the injury and illness experience of hotel and motel workers from 1980 to 1991. Besides hotels and motels, the industry includes ski lodges and resorts, tourist cabins, and inns (such as bed and breakfast places).[1] The hotel study is part of a Bureau of Labor Statistics series focusing on "high impact" industries, which are defined as industries with the largest *numbers* of occupational injuries and illnesses, although not necessarily the highest incidence *rates*.[2]

According to a 1991 BLS survey, the hotel industry was one of nine industries reporting at least 100,000 injury and illness cases that year. (See table 1.) These industries, however, accounted for three-tenths of the 6.3 million cases reported nationwide in 1991. Clearly, steady declines in the number and frequency of injury and illness cases would require safer working conditions and work practices in high-impact and high-rate industries.

A trend to safer hotels and motels, however, is not evident from BLS survey results during the 1980's. At the start of that decade, the injury and illness rates for hotels and for private industry as a whole both hovered around 9 cases per 100 full-time workers. In 1991, though, the rate for hotels (10.4 per 100 workers) was two points above the private industry rate (8.4 per 100 workers).[3]

Chart 1 compares 1980 and 1991 changes in injury and illness incidence rates for hotels and motels and for all private industry by type of case, defined as either serious enough for workers to take time off from their regular job duties or less serious cases in which workers typically require medical treatment, but do not take days off from regular work. It shows that the rise in injury and illness rates for the hotel industry over the 1980–91 period resulted almost entirely from

John J. Kane and Martin E. Personick are economists in the Office of Safety, Health and Working Conditions, Bureau of Labor Statistics.

an increased frequency of "lost workday" cases. No corresponding rise occurred in all private industry, nor did the incidence of less serious cases change appreciably in either hotels or all private industry.

In addition to becoming disabled more often, today's hotel staff are sustaining disabilities that require longer periods of recuperation. For each disabling injury or illness in 1991, hotel employees spent an average of 20 workdays away from their job or on light duties at work—6 days longer than in 1980. (See appendix for method of counting lost workdays.)

The industry at a glance

Old inns and taverns, such as those recreated in historical Williamsburg, VA, provided temporary shelter and comfort to the founding fathers, merchants, and other occasional colonial travelers who commonly shared meals and even beds in these modest accommodations.[4]

Today, the more than 40,000 hotels and motels in the United States offer travelers about 3 million guestrooms on any given day, ranging from basic lodging in "no frills" budget motels to apartment-size hotel suites.[5] Several hundred "super" hotels, in fact, can accommodate large conventions and meetings during which attendees rent 500 guestrooms or more each day.[6]

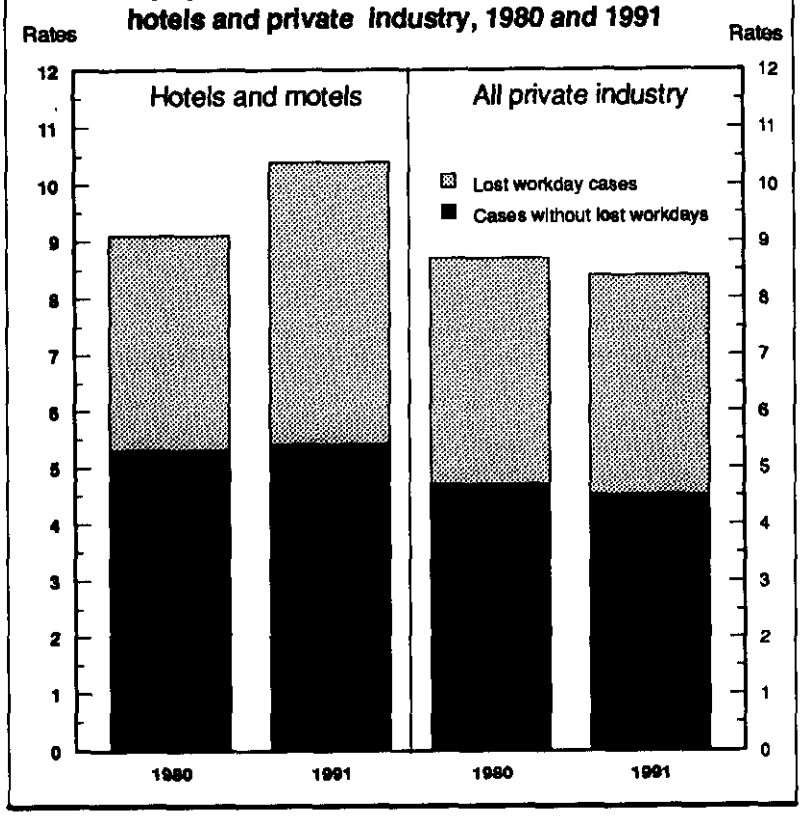
In 1991, the hotel industry employed slightly more than 1.5 million workers nationwide. Among the State leaders in hotel employment that year, California, Nevada, and Florida each had at least 125,000 hotel and motel workers and Texas, New Jersey, and New York had between 70,000 and 80,000 workers each. Together, these six States accounted for more than two-fifths of the industry's workers.[7] Small to mid-size lodging places (employing fewer than 50 workers each) are numerically important, constituting seven-eighths of the Nation's 40,000 hotels and motels; establishments of that size, however, have a much smaller share (slightly less than one-fourth) of the hotel employment total.[8]

Guestroom rentals accounted for about three-fifths of the $50 billion in total hotel and motel receipts from its customers in 1987, the latest year available for the census of services.[9] The rest of the total largely came from sales of meals and beverages in hotel restaurants and bars. Not surprisingly, room rentals were a larger share of total receipts in motels and motor inns, many of which lack eating facilities, than in traditional hotels. Such differences suggest that staffing and injury patterns might vary among and within different branches of the hotel and motel industry, depending on types of services offered.

The tendency to have more female workers and short work schedules was evident in the hotel industry, compared with private nonfarm industries as a whole. In 1991, women made up 55 percent of the 1.5 million workers in hotels and motels, compared with 47 percent of total private nonfarm payrolls. Also in that year, the average workweek for all nonsupervisory workers in the hotel industry stood at 30.4 hours, 4 hours less than the private industry average. As its short hours imply, the hotel industry attracts a substantial number of part-time workers, many of whom are also students.[10]

Nearly two-thirds of the job total in the hotel and motel industry were classified as service occupations, most notably food and beverage preparers (especially waiters and waitresses) and maids/housekeeping cleaners. Next in frequency were clerical and administrative support personnel (particularly hotel desk clerks)—slightly more than one-eighth of the industry's work force total. Job categories with 25,000 workers or more (besides those in the service and administrative support groupings) included various manager/executive classifications, cashiers, maintenance repairers, and laundry/dry-cleaning machine operators.[11]

Chart 1. **Injury and illness incidence rates by type of case, hotels and private industry, 1980 and 1991**



The hotel and motel industry employs many workers with relatively high separation rates, defined as the proportion of workers who leave an occupation for any reason over a 1-year period.[12] For all industries combined, the separation rate was 34 percent for waiters and waitresses, 32 percent for hotel desk clerks, and 24 percent for janitors and cleaners (including maids), while the rate for all occupations was 18 percent.[13] Previous studies have shown that high labor turnover can exacerbate the safety and health problems associated with inexperienced or "green" workers.[14]

Frequency and severity measures

As part of its annual survey of occupational injuries and illnesses, the Bureau of Labor Statistics develops a variety of measures to gauge the frequency and severity of workplace incidents. (See appendix.) All such measures show that the injury and illness record of hotels and motels did not improve during the 1980's. The broadest gauge—the injury and illness rate for total recordable cases—*rose* from an average of 9.2 cases per 100 full-time workers in the 1980–83 period to an average of 10.6 in the 1988–91 period.

The following tabulation, moreover, shows that rates for injury and illness cases involving lost worktime in the hotel industry rose more sharply over the 1980's than did rates for less serious cases, those generally requiring medical treatment, but not days away from regular work duties. As a result, disabling (lost worktime) cases as a share of the hotel case total rose from 42 percent in 1980 to 48 percent in 1991.

	Average rate		
	1980–83	*1984–87*	*1988–91*
Total recordable cases	9.2	10.2	10.6
Lost workday cases	3.8	4.4	4.8
Nonfatal cases without lost workdays	5.4	5.8	5.8

During the 1988–91 period, hotel workers were disabled on the job more frequently (4.8 cases per 100 workers) than the corresponding rate for private industry workers as a group (4.0 per 100 workers). Disabled hotel workers and their private industry counterparts both returned to their regular jobs, on average, about 4 weeks after the disabling incident. A nationwide trend to longer periods of recuperation has been evident since the early 1980's, when lost worktime per lost workday case averaged about 3 weeks in hotels and all private industry.

The extent of safety and health problems in hotels and motels varied by size of the work force. Hotels and motels injury and illness rates were considerably lower for the industry's small and mid-size establishments than for its larger lodging places. The 1991 rate for total recordable cases, for example, was 4.6 for hotels and motels employing fewer than 50 workers, compared with 11.9 for larger establishments. Furthermore, a large majority of these small and mid-size lodging places reported no recordable cases in 1991—a pattern consistent with the national experience for firms employing fewer than 50 workers.

Separate State data are useful in spotting variations in the injury and illness experience in an industry.[15] In hotels and other lodging places, for ex-

Table 1. **Industry groups with the largest number of occupational injuries and illnesses, BLS annual survey, 1991**

SIC code[1]	Industry group	Employment (thousands)	Injuries and illnesses: Total cases (thousands)	Injuries and illnesses: Total case rate[2]
	Private industry[3]	90,573.8	6,345.7	8.4
806	Hospitals	3,656.7	326.7	11.5
581	Eating and drinking places	6,465.4	313.6	7.5
541	Grocery stores	2,870.6	242.4	11.9
421	Trucking and courier services, except air	1,486.7	202.8	14.5
805	Nursing and personal care facilities	1,498.8	176.8	15.3
371	Motor vehicles and equipment manufacturing	789.0	175.4	23.4
531	Department stores	2,046.6	156.7	11.2
201	Meat products manufacturing	426.1	125.7	30.0
701	Hotels and motels	1,544.6	121.9	10.4

[1] *Standard Industrial Classification Manual*, 1987 Edition.
[2] Rates per 100 equivalent full-time workers. See footnote 3 of text for method of calculation.
[3] Excludes farms with fewer than 11 employees.

Note: The nine groups here are the only "three-digit" industrial classifications reporting at least 100,000 injury and illness cases in 1991.

ample, the injury and illness rate for total recordable cases ranged from 13 per 100 workers or higher in California, Hawaii, and Oregon to 7 or fewer per 100 workers in Arkansas, Iowa, Kansas, Mississippi, Nebraska, North Carolina, North Dakota, and West Virginia. (State data for hotels and other lodging places relate to 1990, the latest year available, and include data, where available, for rooming houses, camps, and other lodging places in addition to hotels and motels.[16])

Overall State rates, however, are not necessarily indicative of accident severity, as measured by the average number of workdays lost or restricted before returning to regular work duties. Although they had relatively high injury and illness rates in hotels and other lodging places, California, Hawaii, and Oregon reported somewhat shorter recuperation periods from work disabilities (California, 19 days; Hawaii, 17; and Oregon, 18) than the hotel industry nationwide (averaging 20 days per lost workday case in 1990). Three States reporting relatively low rates in 1990, in contrast, had above-average recuperation periods from work-related disabilities in lodging places—Iowa (23 days), Kansas (33 days), and North Dakota (37 days).

Characteristics by case and worker

The BLS annual survey reports on the number and frequency of work-related injury and illness cases by industry, but does not describe those cases or the workers affected. Such case and worker characteristics are available from another Bureau program—the Supplementary Data System—based on information reported to selected State workers' compensation systems. Unlike the annual survey, however, the Supplementary Data System does not produce nationwide estimates and lacks a uniform treatment among States of what is a compensable workplace injury or illness.[17] Nonetheless, despite these and several analytical and statistical limits, the Supplementary Data System helps spot general patterns (or their absence) in the characteristics of work-related injuries and illnesses involving lost worktime.

To obtain the broadest geographic profile possible for this analysis, injury and illness cases from 14 States participating in the 1988 Supplementary Data System were combined with comparable cases from 12 other States and the Virgin Islands that participated in the 1987 Supplementary Data System (due to a lack of resources, these 13 jurisdictions did not participate in the 1988 System). The aggregated hotel and motel total for the 27 jurisdictions amounted to about 21,700 injury and illness cases that involved lost worktime.[18] The following profiles for disabled hotel and motel workers identify the principal categories of each case and worker characteristic studied.

The Supplementary Data System identifies four basic characteristics of injury and illness cases: physical condition, or nature of injury or illness; part of the body affected by the condition; source of injury or illness—the object, substance, exposure, or bodily motion that directly produced or inflicted the condition; and the type of event or exposure associated with the injury or illness—that is, how the condition was inflicted or produced. These features help determine the "what and how" of disabling incidents in the workplace.

Sprains and strains occurred most frequently among the *nature of injury or illness* categories, accounting for nearly half of the 21,700 hotel and motel cases incorporated in the 1987–88 Supplementary Data System tabulation. Other notable conditions that disabled hotel workers, each constituting about 5 percent to 10 percent of the industry total, included contusions, crushing, and bruises; cuts, lacerations, and punctures; fractures; and burns.

The back and, to a much lesser extent, other portions of the trunk (the abdomen and shoulders, for example) together were the major *part of the body affected* by injuries and illnesses, constituting nearly two-fifths of the industry's case total. Another two-fifths of its cases were divided about evenly between two other major body parts: the upper extremities (particularly the fingers, hands, and wrists) and the lower extremities (especially the knees, ankles, and feet). Of the many combinations of nature and affected body part categories, "back sprain" was most commonly cited (with a one-fourth share of the case total).

As for the *source of injury and illness*, each of the following categories accounted for about one-tenth to two-tenths of the disabling hotel cases: floors and other working surfaces (such as stairs and steps); boxes, barrels, and containers (such as pots, pans, and dishes); furniture and fixtures (such as beds, mattresses, and tables); and bodily motion that in itself produced the injury, such as twisted ankle while climbing. Other notable sources included luggage carriers, cleaning carts, and other nonpowered vehicles; knives and other handtools; slicers and various other machines; doors and gates; and soaps, detergents, and other chemical compounds.

The leading *event or exposure* associated with injuries and illnesses in hotels and motels was overexertion from lifting and otherwise moving heavy or unwieldy objects, which represented slightly more than one-fourth of the industry's case total. Next in frequency were falls to floors, walkways, and other surfaces on the same level as the disabled worker (one-fifth of the case total); and being struck by doors, kitchen knives, and a variety of other moving objects or persons (one-

eighth of the total). Other prominent events included striking against furniture and other stationary objects; falling on stairs and from elevations; and slipping, tripping, and other bodily reactions to personal movement that, by itself, was the source of injury.

Besides case characteristics, the Supplementary Data System also identifies *worker characteristics*, such as sex and occupation—the "who" of work place injuries and illnesses. These characteristics have been the subject of previous BLS studies that examined the injury risks facing female workers and how to identify comparatively hazardous occupations.[19]

Women figured prominently in the safety statistics of hotels and motels, constituting slightly more than half of the industry's 21,700 injury and illness cases recorded in the 1987–88 Supplementary Data System tabulation. Partly reflecting their differences in staffing patterns, injured women were most commonly maids, while injured men were most often in various food service occupations. The following tabulation shows the percentage of injuries and illnesses common to men and women employed in hotels and motels, by occupation:

	Women	*Men*
All occupations:		
Number of cases	12,000	9,700
Percent of total	100	100
Food service jobs	25–29	40–44
Cooks	5–9	10–14
Kitchen workers/helpers	5–9	10–14
Table service workers	10–14	10–14
Building service jobs	55–60	15–19
Maids and housemen	50–54	10–14
Precision production and craft	0–4	10–14
All other job groups	15–19	25–29

Safety risks appear to be comparatively higher for women workers in hotels and motels, where they are primarily in service occupations, than in private industry as a whole, where they are typically in clerical and other administrative support jobs.[20] Women account for similar shares (roughly half) of the work forces in hotels and motels and in all private industry, but their share of injury and illness cases is much larger in hotels (slightly more than half the case total) than their share in private industry as a whole (about one-fourth).

Service workers were, by far, the *major occupational grouping of the injured and ill worker* in hotels and motels, accounting for four-fifths of the 21,700 disability cases in that industry. By themselves, building service jobs were two-fifths of the industry's disability case total, and food service jobs, one-third of that total. Among individual occupations, maids and housemen dominated cases in building services, while cases involving food service workers were split among several jobs, most notably cooks, waiters and waitresses, and kitchen helpers.

Injury profiles can vary by occupation partly due to differing work activities, materials and equipment used, and work processes. Not surprisingly, the profile of how injuries happened to maids and housemen differed from that for cooks in the hotel industry.

The following tabulation illustrates this point by contrasting the relative shares (percentage ranges of total cases) of various categories that describe the event (manner) and source of injury for the two jobs.

	Maids and housemen	*Cooks*
All events and sources (percent)	100	100
Event:		
Overexertion	30–34	15–19
Fall	25–29	20–24
Struck by or against	15–19	35–39
Bodily reaction	10–14	5–9
Contact with temperature extremes	0–4	10–14
All other events	10–14	10–14
Source:		
Bodily motion	10–14	5–9
Box, barrel, or container	5–9	15–19
Food product	0–4	5–9
Furniture or fixture	20–24	0–4
Handtool	0–4	15–19
Working surface	20–24	15–19
All other sources	30–34	25–29

Improving the statistics

In the late 1980's, the Bureau began testing various ways to capture worker and case characteristic data on a nationwide basis for injury and illness cases that were defined uniformly.[21] The goal was to design a survey that embraced the most salient features of the Bureau's annual survey and of State workers' compensation databases.

After several years of planning and testing various methods of data collection, the Bureau expanded the scope of its annual nationwide survey in 1992 to include information on how the incident occurred and pertinent worker characteristics, such as age, sex, and occupation, for all injury and illness cases resulting in days away from work.[22]

The redesigned survey, which replaces the Supplementary Data System, greatly expands the number of disabling cases to be covered by worker and case characteristic profiles. In hotels and mo-

tels, for example, the redesigned survey covers some 50,000 cases nationwide involving days away from work—more than double the industry's case total in the 1987–88 Supplementary Data System tabulation of roughly two dozen States.

Some of the increased case coverage reflects additional States that did not participate in the Supplementary Data System; the remainder mostly reflects additional days-away-from-work cases (primarily of relatively short duration) that do not meet the varying reporting requirements of State workers' compensation agencies. The uniform case definition of the redesigned survey adds credibility to State-to-State and State-to-national comparisons of injury and illness characteristics.

The redesigned survey also collects information on the amount of lost worktime by individual case—information not available from the Supplementary Data System. These data can be summarized as the *average* number of lost workdays per case that will help identify groups of injured or ill workers and types of incidents associated with comparatively long recuperation periods; or the data can be summarized as the *distribution* of cases by number of lost workdays that will help focus on lengthy recuperations that result in a loss of, say, 30 workdays or more. Such profiles could identify, for example, the proportion of "long-term" injury and illness cases, by occupation and by age of the disabled worker.

IN SUMMARY, the expanded BLS Federal/State survey will offer enhanced opportunities to analyze and target work hazards and exposures, especially for industries with large nationwide work forces. Improving knowledge and awareness of safety and health-related problems can help all industries to formulate and to evaluate specific solutions, resulting in safer, more healthful workplaces. □

Footnotes

[1]Hotels and motels has been designated industry group 701 in the *Standard Industrial Classification Manual*, 1987 edition, prepared by the Office of Management and Budget. The industry includes commercial establishments primarily providing lodging, or lodging and meals, for the general public. Excluded from this industry are hotels operated by organizations for their members only; apartment hotels; rooming and boarding houses; and sporting and recreational camps.

[2]For a current listing of industries with high rates of workplace injuries and illnesses, see *Occupational Injuries and Illnesses in the United States by Industry, 1991*, Bulletin 2424 (Bureau of Labor Statistics, 1993), text table 2.

Besides hotels and motels, other BLS research on "high impact" industries includes the following articles: Martin E. Personick, "Nursing home aides experience increase in serious injuries," *Monthly Labor Review*, February 1990, pp. 30–37; Martin E. Personick, "Profiles in safety and health: eating and drinking places," *Monthly Labor Review*, June 1991, pp. 19–26; Sarah O. Campany and Martin E. Personick, "Profiles in safety and health: retail grocery stores," *Monthly Labor Review*, September 1992, pp. 9–16.

[3]*Incidence rates* represent the number of injuries and illnesses per 100 full-time workers and were calculated as:

$$(N/EH) \times 200{,}000$$

where:

N = number of injuries and illnesses;

EH = total hours worked by all employees of the industry during the calendar year; and

200,000 = base for 100 equivalent full-time workers (employees working 40 hours per week, 50 weeks per year).

A variety of useful incidence rates may be computed by making N equal to the number of lost workday cases, lost workdays, and so forth. In each instance, the result is an estimate of the number of cases or days per 100 full-time workers.

[4]See Matthew Josephson, *Union House, Union Bar* (New York, Random House, 1956) for a description of hotel and restaurant workers and the changing nature of their work and working conditions since the late nineteenth century.

[5]*1987 Census of Service Industries: Hotels, Motels, and Other Lodging Places*, SC87-S-3 (U.S. Bureau of the Census, 1991), table 5.

[6]*Ibid.*

[7]*Employment and Wages, Annual Averages, 1991*, Bulletin 2419 (Bureau of Labor Statistics, 1993), p. 444.

[8]*County Business Patterns, 1989: United States*, CBP-89-1 (U.S. Bureau of the Census, 1991), p. 62.

[9]*1987 Census of Service Industries: Hotels*, table 2.

[10]Nonfarm payroll employment, average weekly hours, and average hourly or weekly earnings data by industry are available from the Bureau of Labor Statistics, Division of Monthly Industry Employment Statistics.

The hotel industry provides first jobs to many new entrants into the labor force. For a description of workers and work in hotels and other lodging places, see *Career Guide to Industries*, Bulletin 2403 (Bureau of Labor Statistics, 1992), pp. 180–86.

[11]Occupational data are available upon request to the Office of Employment and Unemployment Statistics, Bureau of Labor Statistics.

[12]See *Technology and Labor in Three Service Industries: Utilities, Retail Trade, and Lodging*, Bulletin 2367 (Bureau of Labor Statistics, 1990), p. 32, for a brief mention of high turnover rates in hotels. For a more detailed discussion of the methodology for estimating separations by occupation, see *Total and Net Occupational Separations: A Report on Recent Research*, available upon request from the Office of Employment Projections, Bureau of Labor Statistics.

[13]*Occupational Projections and Training Data*, Bulletin 2351 (Bureau of Labor Statistics, 1990), pp. 22–24.

[14]See Norman Root and Michael Hoefer, "The first work injury data available from new BLS study," *Monthly Labor Review*, January 1979, pp. 76-80. Footnote 3 in this article lists other studies that relate work injuries to work experience.

[15]For a variety of reasons, injury and illness estimates tend to be more volatile from year to year for individual States

than for the Nation as a whole. Thus, the 1990 State data are more illustrative of geographic variability than of long-term relationships among individual States.

[16]The large majority of States published the broader industry group "hotels and other lodging places" but did not also show separate data for its dominant component "hotels and motels" to ensure the confidentiality of data for the tiny residual components of "hotels and other lodging places." For State comparisons, we used the broader industry definition for lodging so that data from all 36 States participating in the 1990 annual survey might be included.

[17]The Supplementary Data System is not statistically representative of the Nation as a whole because the data cover only the jurisdictions participating in the system, for example, 14 States in 1988.

States differ, moreover, in the kinds of cases they require by law to be reported to workers' compensation agencies. While some States require reports for all occupational injuries and illnesses, regardless of length of disability, others require reports only for cases of sufficient duration to qualify for indemnity compensation payments, and still other States require reporting of cases involving a specific number of lost workdays, regardless of the indemnity "waiting period." Thus, the file of the Supplementary Data System is not a complete census of all "disabling" injuries and illnesses in the jurisdictions studied.

The Supplementary Data System, however, does standardize the classification of data using the 1972 *Standard Industrial Classification Manual*, the 1980 *Census of Population, Alphabetical Index of Industries and Occupations*, and the 1962 *American National Standards Method of Recording Basic Facts Relating to the Nature and Occurrence of Work Injuries*, published by the American National Standards Institute (ANSI) and often referred to as the Z16.2—1962 standards, or simply, Z16.2.

[18]The 14 States that participated in the 1988 Supplementary Data System and their number of hotel and motel cases (in parenthesis) included Arkansas (153), California (6,926), Indiana (452), Iowa (200), Kentucky (438), Louisiana (528), Maine (272), Maryland (535), Michigan (579), Mississippi (143), Missouri (788), Oklahoma (252), Oregon (679), and Texas (2,563). The comparable information tabulated for the 13 jurisdictions that participated in 1987 but not 1988 included Alaska (220), Arizona (696), Colorado (1,053), Hawaii (2,009), Nebraska (137), New Mexico (158), Ohio (912), Tennessee (490), Virgin Islands (143), Virginia (380), Washington (544), Wisconsin (332), and Wyoming (146).

As used in this article, the aggregated tabulations for hotels and motels contained about 14,500 cases reported by the 1988 participating States and 7,200 reported by the aforementioned 1987 participants. The 1987–88 total of about 21,700 cases was two-fifths of the national total of 53,500 lost workday cases in hotels and motels; the latter figure was an average of the 1987 and 1988 national counts for that industry as reported in the Bureau's annual survey.

[19]See Norman Root and Judy R. Daley, "Are women safer workers? a new look at the data," *Monthly Labor Review*, September 1980, pp. 3–10; and Norman Root and Deborah Sebastian, "BLS develops measure of job risk by occupation," *Monthly Labor Review*, October 1981, pp. 26–30.

For earlier BLS studies of injuries by occupation and type of hotel (transient, resort, and residential), see *Work Injuries and Work-Injury Rates in Hotels*, Report 230 (Bureau of Labor Statistics, 1962) and *Work Injuries and Accident Causes in Hotels*, Report 329 (Bureau of Labor Statistics, 1967).

[20]Although incidence rates by occupation are not available, one way to evaluate the relative safety risks of service workers and clerical workers in hotels and motels is to compare each occupation's share of the industry's total employment to its share of total disabling injuries and illnesses. Service workers, for example, had a somewhat larger share of hotel disability cases (four-fifths) than of hotel employment (two-thirds), implying slightly above-average injury risk. Clerical and other administrative support workers, in contrast, were slightly more than one-eighth of the industry's workforce but less than a twentieth of its disability case total, indicating below-average risk.

See Root and Sebastian, "BLS develops measure of job risk by occupation," for a detailed description of this approach and its limitations. Grouping private industries, Root and Sebastian found the injury risk of service workers to be slightly below what their employment share would suggest, while the injury risk for clerical workers was only one-fourth that for service workers.

[21]A comprehensive evaluation of the BLS safety and health system and recommendations for change are included in Earl S. Pollack and Deborah Gellerman Keimig, eds., *Counting Injuries and Illnesses in the Workplace: Proposals for a Better System* (Washington, National Academy Press, 1987).

[22]Operationally, worker and case characteristic data from a probability-based sample of establishments and their cases involving days away from work will be statistically representative of all such lost workday cases.

APPENDIX: Work injury definitions

In this article, definitions of occupational injuries and illnesses and lost workdays conform to the recording and reporting requirements of the Occupational Safety and Health Act of 1970 and Part 1904 of Title 29, Code of Federal Regulations. Supplemental information pertaining to these definitions is in the booklet, *Recordkeeping Guidelines for Occupational Injuries and Illnesses*, available from the Office of Statistics, Occupational Safety and Health Administration, U.S. Department of Labor.

Recordable occupational injuries and illnesses are:

1. Occupational deaths, regardless of the time between injury and death, or the length of the illness; or
2. Nonfatal occupational illnesses; or
3. Nonfatal occupational injuries which involve one or more of the following: loss of consciousness, restriction of work or motion, transfer to another job, or medical treatment (other than first aid).

Occupational injury is any injury, such as a cut, fracture, sprain, amputation, and so forth, which results from a work-related event or from a single instantaneous exposure in the work environment.

Occupational illness is any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to factors associated with employment. It includes acute and chronic illnesses or disease which may be caused by inhalation, absorption, ingestion, or direct contact.

Lost workday cases are cases which involve days away from work, or days of restricted work activity, or both.

1. *Lost workday cases involving days away from work* are those cases which result in days away from work, or a combination of days away from work and days of restricted work activity.

2. *Lost workday cases involving restricted work activity* are those cases which result in restricted work activity only.

Lost workdays—away from work are the number of workdays (consecutive or not) on which the employee would have worked but could not because of occupational injury or illness.

Lost workdays—restricted work activity are the number of workdays (consecutive or not) on which, because of occupational injury or illness:

1. The employee was assigned to another job on a temporary basis; or

2. The employee worked at a permanent job less than full time; or

3. The employee worked at a permanently assigned job but could not perform all duties normally connected with it.

The number of days away from work or days of restricted work activity does not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work.

The count of days lost or restricted continues until the disabled worker resumes regular job duties, is permanently reassigned to another job, or a final determination is made that the employee is totally disabled.

State workers' compensation systems, in contrast, commonly follow guidelines that differ from the recordkeeping of the Federal Occupational Safety and Health Administration in determining which cases should be filed and the duration of those disabling cases. In Michigan, for example, a worker disabled on the job initially is eligible for workers' compensation if absent from work for more than 7 days after the date of injury or onset of illness (excluding the day of the incident and Sunday). The "duration" of such cases coincides with the duration of workers' compensation, which might span several years and relate to recurring episodes of the initial disability. Federal OSHA guidelines, in contrast, include all cases involving 1 day or more away from work, beyond the day of injury or onset of illness. The duration of such a case corresponds to the employer's estimate of the number of workdays lost or restricted due to that single incident, regardless of State workers' compensation regulations.