

Hidden Dangers

Risks of Wholesale and Retail Work Largely Unnoticed

BY VERN ANDERSON AND HERB LINN

Wholesale and retail trade (WRT) jobs are frequently perceived as relatively low-risk work, especially when compared to industry jobs in construction, agriculture, manufacturing, mining, and transportation. This perception is largely borne out when the numbers and rates of illnesses, injuries and deaths from injuries are tabulated and calculated for the entire WRT sector.

But a closer look reveals that, each year, the WRT workforce experiences between 500 and 600 fatal injuries and over 800,000 recorded nonfatal injuries and illnesses. (Table 1 displays the relevant NAICS code, employment levels, fatal injuries and nonfatal injuries and illnesses in 2007 for each of the eight industry sectors in the NIOSH National Occupational Research Agenda.) The combined

WRT workforce of over 21 million faces key risk factors for potentially disabling back and shoulder injuries, and comprises a large proportion of the youngest and oldest workers in the U.S. The WRT sector also includes thousands of small businesses, where safety and health risks often go unrecognized and are rarely discussed. This presents a challenge to researchers, practitioners and policymakers who wish to communicate risk and prevention information. These data suggest that the WRT sector deserves more attention from those concerned with reducing workplace injuries and fatalities.

Demographics

In 2007, approximately 21 million workers were employed in either wholesale (6.0

million) or retail (15.6 million) companies. The retail sector includes a higher than average proportion of younger (under 20 years of age) and older (65 years and older) workers. In the United States, a job in the retail industry represents many workers' initial entry into the workforce. Retail store jobs are also often filled by older workers who are phasing out of the workforce or re-entering it after retirement.

About NORA

Since 1996, the National Occupational Research Agenda (NORA) has served as a research framework for NIOSH and the nation. Diverse parties collaborate to identify the most critical issues in workplace safety and health. Partners then work together to develop goals and objectives for addressing these needs. Participants in NORA include stakeholders from universities, large and small businesses, professional societies, government agencies, and worker organizations.

In 2006, the program adopted a sector-based structure to better move research to practice within workplaces. Wholesale and retail trade (WRT) is one of eight major industry sectors initially selected for strategy and program development. The following strategic goals are intended to address the top safety and health concerns within WRT:

1. Reduce musculoskeletal disorders (lifting)
2. Reduce traumatic injuries (slips and falls)
3. Reduce workplace violence
4. Reduce motor vehicle-related injuries
5. Improve outreach to small businesses
6. Increase understanding of vulnerable workers

Table 1. National Occupational Research Agenda (NORA) Data for each Industry Sector: BLS Fatalities and Injuries/Illnesses, 2007

NORA II: Defined Sector	NAICS 2-digit Codes	Employment ¹	Fatal Injuries ²	Non-Fatal Injuries/Illnesses ³
Agriculture, Forestry and Fishing (including Hunting)	11	997,600	573	50,500
Construction	23	11,416,000	1,178	380,500
Healthcare and Social Assistance	62	16,095,000	114	670,600
Manufacturing	31-33	16,204,000	392	783,100
Mining	21	730,000	181	21,900
Services (approx.)	51-56, 61, 71-72, 81	67,100,000	1,114	951,400
Transportation, Warehousing and Utilities	48-49, 22	4,858,100	869	289,500
Wholesale and Retail Trade	42, 44-45	21,707,000	533	822,200
Private Industry (approx.)		~125,000,000	~5,000	~4,000,000

^{1,3}www.bls.gov/iif/oshwc/osh/os/ostb1919.pdf ²www.bls.gov/iif/oshwc/cfoi/ctfb0223.pdf

Younger and older workers, as well as other vulnerable populations (e.g., women, ethnic minorities), may face higher risk of work-related injury, illness, and death in certain WRT working environments and tasks. For example, young workers typically perform tasks that are outside their normal responsibilities, and they are likely to be unfamiliar with work requirements and safe operating procedures for those tasks. They may also lack the physical and emotional maturity needed for certain tasks (NIOSH 2008).

Older workers may face higher risk of fatality and injury due to decreasing physical capability and sensory and cognitive abilities. On the other hand, older workers may benefit, risk-wise, from increased maturity, experience and decision-making skills. In any case, workers 65 and older experienced a work fatality rate of 9.9 per 100,000 in 2007—by far the highest rate of any age group and more than twice the average fatality rate across all age groups and industries (3.7 per 100,000 workers).

Retail trade has a large number of foreign-born workers and is second to the service industries in foreign born fatalities (BLS 2006). Members of ethnic minorities may face increased risk for a number of reasons, including their willingness to take on high-risk tasks that other workers might shun, differences in body size and proportion that may force them to wear ill-fitting protective equipment and clothing, and language barriers that make interpersonal communication and comprehension of safety and health requirements difficult.

The varied backgrounds of WRT workforces complicate safety and health training, according to David Bonauto, MD, associate medical director of the SHARP (Safety and Health Assessment and Research for Prevention) program at the Washington State Department of Labor and Industries. "The applicability of education and training to all the groups represented in the workforce is obviously the key thing," he says. "[This requires] appropriate materials for a non-English speaking population, for a worker who is younger and has some sense of invincibility versus an older worker." In addition, small businesses, which employ many WRT workers, may not be equipped to provide the proper training. Bonauto explains that "a whole different safety and

health culture" exists in small, family-owned businesses, which usually do not have dedicated health and safety professionals. "[Small businesses] may have different economic or other constraints that present problems for them in terms of safety and health," Bonauto says.

Risk Factors

Exposures to musculoskeletal and traumatic injury risks associated with manual and machine-related product handling tasks translate into a high number of overexertion injuries, particularly back injuries due to lifting, and "contact with objects/equipment" injuries resulting from inadvertent injurious contact with products and machines. Sales occupations, particularly cashiers, are typically engaged with the public in tasks involving the exchange and handling of cash, which represent higher risks of robbery-related injuries and deaths. Mobile salespersons in both retail and wholesale companies may face highway traffic risks. Other risks include long work hours; frequent turnover, which affects training; and a vulnerable workforce of young and old workers.

Fatal Injuries

In 2007, 336 U.S. workers died as a result of injuries suffered during retail work activities and 197 workers died while performing

wholesale work activities. The leading cause of worker fatality in the retail sector was assault and violent acts; transportation-related events caused the most deaths in the wholesale sector.

Work-related homicides are heavily concentrated in a few retail subsectors. Convenience stores—whether standalone or combined with gasoline stations—accounted for 62, or nearly 40 percent, of the work-related homicides that occurred in the retail sector in 2007. Non-homicide fatalities were concentrated in food and beverage stores, grocery stores, and general merchandise stores (BLS 2007a).

Nonfatal Injuries

In 2007, there were 799,200 cases of non-fatal injuries in the WRT sector and an additional 23,000 cases of occupational illnesses (see www.bls.gov/iif/oshwc/osh/os/ostb1919.pdf). Fortunately, the vast majority of these workers did not miss work; however, there were 242,000 cases with "days away from work." A case is defined as one or more days away from work. Assuming the minimum of one eight-hour day per case, the result is nearly 2 million hours of lost time for the WRT industry. The loss can be computed in terms of lost productivity, medical costs, workers' compensation premium adjustments, personal suffering, and lost

Table 2. Highest Nonfatal Injury Incidence Rates Among Industry Subsectors, 2007 (source: www.bls.gov/iif/oshwc/osh/os/ostb1909.pdf SNR05)

Industry Subsector	NAICS Code	2007 Annual Average Employment	Incidence Rate per 100 Full-Time Workers
Beer, Wine, Distilled Alcoholic Beverages	4248	155,300	8.4
Metal and Mineral (except Petroleum)	4235	131,700	7.7
Recreational vehicle dealers	44121	40,500	7.5
Home Centers building/material supply	44411	680,600	7.5
Warehouse Clubs/Superstores	45291	1,078,700	6.8
Grocery and Related Products	4244	724,700	6.7
Other General Merchandise Stores	45299	333,800	6.6
Supermarkets and Other Grocery	44511	2,351,000	6.3
Motor Vehicle and Motor Vehicle Parts	4231	351,800	5.9
Other Building Materials	44419	301,100	5.9
Lumber and Other Construction Materials	4233	265,700	5.4
Private Industry		114,833,400	4.0

income. "A lot of employers think of their workers' compensation premiums as the [only] direct cost," Bonauto says. "But there are additional costs that go into training a new worker to replace an injured worker, [as well as] losses in productivity for a newer worker. Assessing the real economic burden of losing a worker to an injury or illness is very important. Often, the direct costs associated with workers' compensation are only a small fraction of the total cost of a work-related injury or illness."

Table 2 provides a rank-order listing of those WRT subsectors that had high rates of nonfatal injuries in 2007. The highest rates belong to a set of NAICS four- and five-digit industry groups that include beer, wine, and distilled alcoholic beverages; metal and mineral (except petroleum); recreational vehicle dealers; home centers; warehouse clubs; and grocery and related products. These higher-risk industry groups ranged from 8.4 to 5.4 injuries per 100 full-time workers. The injury rate for the private sector as a whole was 4.0.

The leading events and exposures leading to nonfatal injury in the WRT sector are overexertion and contact with objects or equipment. Overexertion injuries account for the majority of lost time and productivity in the WRT sector, as well as significant medical and workers' compensation losses (Liberty Mutual Research Institute for Safety 2008). Typically categorized as musculoskeletal disorders, these injuries usually affect soft tissues and are often difficult to identify because they may develop over a period of time. In select WRT industry groups, such as beer, wine, and distilled alcoholic beverages; grocery and related products; pet and pet supply stores; recreational vehicle dealers; fuel dealers; vending machine operators; and warehouse clubs and superstores, the injury/illnesses rates from 2003 through 2007 were 60 to 80 percent higher than the average for the private sector, which was 4.2 per 100 full-time workers. Workers in these industry groups often experience overexertion injuries from manual lifting, pushing/pulling, carrying, and positioning of merchandise. Opportunities exist for conducting efficacy and intervention studies.

Despite the apparently low relative risk of falls in WRT, several specific industries have high incident rates of nonfatal injury

from falls. For example, in the retail sector, the industry recreational vehicle dealers, home furnishings stores, and clothing stores had elevated incident rates for "falls to lower levels." In 2007, both meat markets and pet and pet supply stores had unusually high rates of "falls on the same level" with incidence rates of 169.5 and 84.1, respectively, per 10,000 full-time workers. There is a significant body of research on prevention of falls in the workplace and opportunities exist to implement solutions to these traumatic injuries.

Violence

Homicide is the leading cause of death for women in the workplace, who also face a very high risk of nonfatal injuries from assaults (BLS 2006). These data are particularly relevant for the retail sector, where women comprise nearly half of all employees. In addition to robbery-related events in retail establishments, women also face risks from the spillover of domestic abuse into the workplace, which predominantly victimizes women. Over the last ten years, noticeable progress has been made to protect workers from violence by implementing barriers and increasing lighting, yet workplace violence continues to impact workers' well-being and productivity.

NIOSH Leadership

In 2007, NIOSH convened stakeholders to identify needs and contribute ideas towards the development of a national program portfolio of research and activities for the WRT sector. The resulting program portfolio is posted on the NIOSH website at www.cdc.gov/niosh/nora under "wholesale and retail trade."

This is the first national effort to focus attention on the health and well-being of the 21 million WRT workers employed in 1.6 million businesses. This national WRT agenda is intended to address the question, "What information is needed to be more effective in preventing injuries and illnesses in the wholesale and retail trade sector?" The agenda consists of six strategic goals, listed in the sidebar on page 31, designed to address the top safety and health concerns within the wholesale and retail trade sector. The agenda foundation is based on research needs and information gaps that must be filled in order to make progress on important wholesale and retail trade safety and health issues.

Individuals and organizations interested in partnering on a particular strategic or intermediate goal should contact Vern Anderson, the NIOSH wholesale and retail trade co-chair, at vanderson@cdc.gov. Partnering opportunities can cover a wide range of activities, such as participating in research, helping to develop information products from research, or disseminating information. The National Wholesale and Retail Trade Agenda is a living document that will benefit from the free exchange of ideas, opinions and data and ultimately lead to the reduction of injuries, illnesses and fatalities for this underserved sector.

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