



Putting Data to Work

Oregon Worker Illness and Injury Prevention Program (OWIIPP)

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Putting Data to Work is produced by the Oregon Worker Illness and Injury Prevention Program (OWIIPP)

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Young Workers

Introduction

Approximately 70 to 80 percent of teens have held a paying job at some time during their high school years.¹⁻³ Between 1996 and 1998, a monthly average of 2.9 million workers aged 15 to 17 years worked during school months, and 4 million worked during summer months.^{3,4} Thousands of these young workers sustain a work-related injury or illness each year.

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Scope of the problem

Young workers die or are hospitalized from injuries at work every year, and they have higher rates of work-related injuries and illnesses than adult workers. There is evidence that workers aged 15–24 years are much more likely than older workers to be treated in hospital emergency departments for nonfatal occupational illnesses or injuries — twice as likely as workers aged 25–54 years and three times as likely as workers 55 years of age and older.¹⁰ The National Institute for Occupational Safety and Health estimated that 52,600 work-related injuries and illnesses among 15- to 17-year-olds were treated in hospital emergency departments in 2006. Since only one-third of work-related injuries are seen in emergency departments, it is likely that 157,000 youths sustain work-related injuries and illnesses each year.¹¹

Epidemiological data

OWIIPP used data from the Information Management Division of the Oregon Department of Consumer and Business Services (DCBS) to analyze accepted disabling Oregon workers' compensation claims among workers younger than 25 years of age. Between 2000 and 2007, there were 23,325 accepted disabling claims filed by workers younger than 25 years of age

in Oregon. Overall, 69 percent of these claims were by males and 31 percent were by females. However, as shown in Figure 1, the percentage of female claimants is higher in the youngest age group and decreases as age increases. This may be due to variations in work safety habits or in the types of industries that employ males and females of different ages.

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Rates of injury varied between 2000 and 2007. Figure 2 shows the claims rates for work-related injury in Oregon by age group and year. The rate has increased for 18- to 19-year-olds, from 1.46 per 100 FTE in 2000 to 2.19 per 100 FTE in 2007. For 15- to 17-year-olds, the highest rate was in 2004 (1.42 per 100 FTE), while the lowest rate occurred in 2006 (0.80 per 100 FTE). For 20- to 24-year-olds, the highest rate occurred in 2004 (1.83 per 100 FTE), while the lowest occurred in 2007 (1.32 per 100 FTE).

The most common type of injury was sprains and strains, accounting for 49 percent of all claims, followed by fractures with 11 percent of all claims and lacerations with 9 percent of all claims.

The most common events causing injury included overexertion (24 percent of claims) and being struck by or against objects or equipment (21 percent of claims). However, those 17 years of age and younger were more vulnerable to falls than the other age groups (22 percent of claims, compared to 15 percent of claims for 18- to 19-year-olds and 16 percent of claims for 20- to 24-year-olds).

FIGURE 1. PERCENTAGE OF CLAIMS BY AGE AND GENDER, 2000-2007

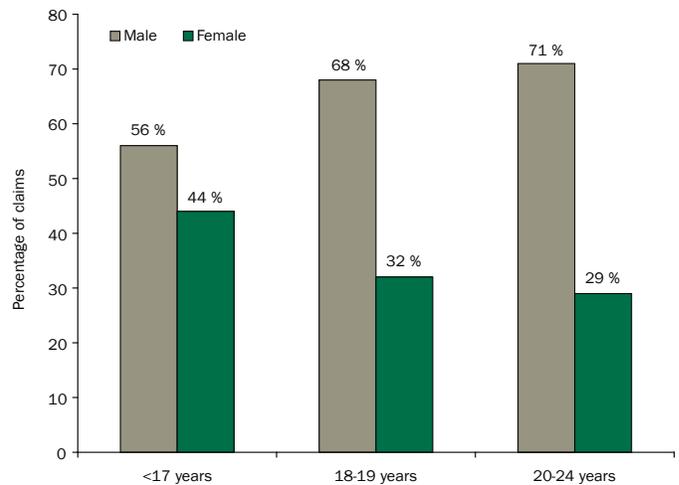
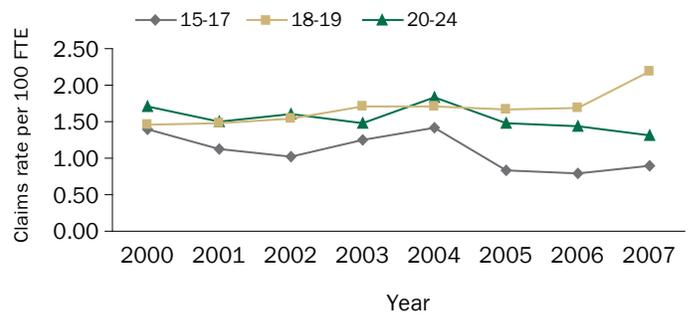


FIGURE 2. RATE OF WORK-RELATED INJURY BY AGE GROUP AND YEAR, 2000-2007



(cont. from page 1)

YOUNG WORKERS ARE AT GREATER RISK FOR WORK-RELATED INJURIES AND ILLNESSES THAN ADULTS FOR A VARIETY OF REASONS, INCLUDING:

- ▶ They may perform tasks for which they have received little or no training.^{3,5,6,7}
- ▶ They switch jobs more often than adults, so tasks may be unfamiliar.⁷
- ▶ They perform a wide variety of tasks even in the same job, whereas adults develop skills and work in one occupational area. For instance, a teenager working in a restaurant may be asked to operate cooking equipment, take orders, serve food, clean the bathroom, and mow the grass.⁷
- ▶ They may work with little or no supervision.⁷
- ▶ They may lack the experience as well as the physical and emotional maturity required to perform certain tasks.³
- ▶ They may be unfamiliar with work requirements and safe operating procedures for certain tasks.³
- ▶ They may not know their legal rights and may not know which work tasks are prohibited by child labor laws.^{3,8,9}
- ▶ Their organs and musculoskeletal systems are experiencing rapid growth, so they are more likely than adults to be harmed by exposure to hazardous substances.³

Figure 3 shows the proportion of claims by industry grouping, and Figure 4 shows the proportion of claims by occupation grouping. The industries with the most claims in Oregon from 2000–2007 were wholesale and retail trade (16 percent), accommodation and food service (12 percent), manufacturing (12 percent), and construction (12 percent).

Figure 4 shows that the most hazardous occupations for young workers were handlers, equipment cleaners, laborers and helpers (22 percent) and service occupations, except protective and household, (17 percent). This is consistent with the high number of young workers employed in the retail and food service industries as well as with the risky nature of occupations requiring heavy lifting, use of sharp tools, and proximity to hot cooking equipment.

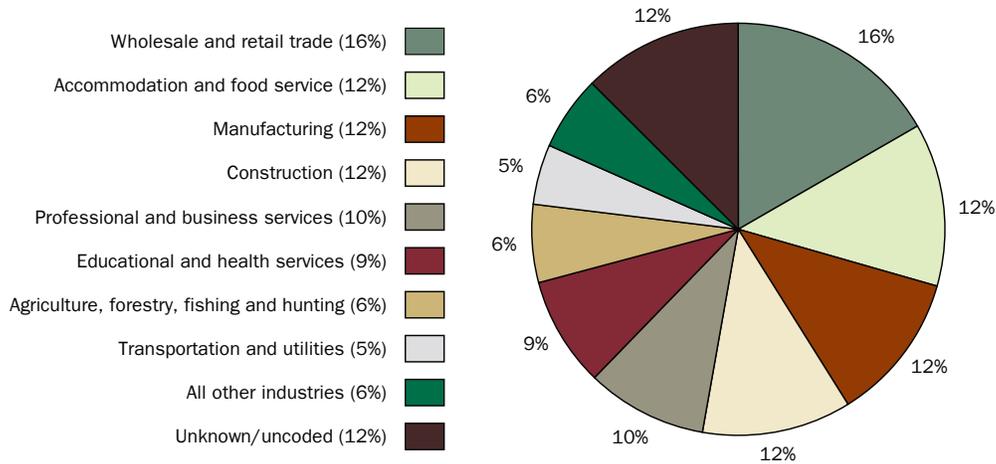
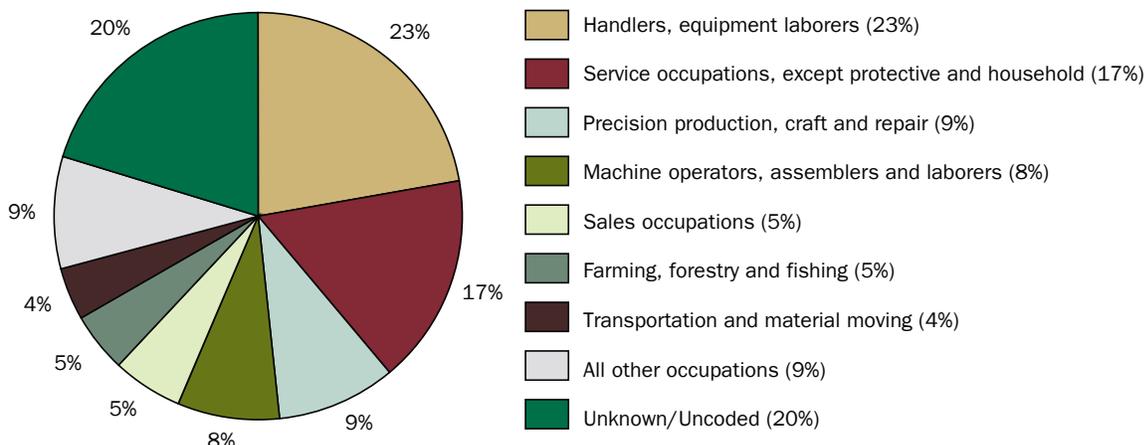


FIGURE 3. INDUSTRY CHARACTERISTICS (NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM) FOR WORKERS YOUNGER THAN 25 YEARS, 2000–2007

FIGURE 4. OCCUPATIONAL CHARACTERISTICS FOR WORKERS YOUNGER THAN 25 YEARS, 2000–2007



Case summaries

CASE 1 - AMPUTATION IN MEAT GRINDER

A 17-year-old male bagger employed at his family's retail grocery store suffered amputation of his right arm when it became caught in an operating meat grinder. A customer had asked him for ground beef. Because none was available at the meat counter, he decided to operate the grinder himself. Some of the meat



became stuck in the grinder bowl. He removed the feed pan and reached into the bowl with his right hand, pushing the meat down into the "worm," a rotating machine part shaped like a corkscrew. When meat fed from the bowl, the worm caught his hand and fed it into the grinder's barrel, amputating his hand and part of his lower right arm.^{3,12} Employees under the age of 18 are forbidden by U.S. law from operating power-driven meat grinders or slicers.

CASE 2 - CRUSHING DEATH BY FORKLIFT

A 17-year-old male laborer working at a salvage lumber business died when the forklift he was operating overturned. A coworker was riding on the right side of the forklift, holding on to the overhead guard. As the young worker turned the forklift sharply to the left, it tipped and overturned to the right. His coworker jumped out, landing with her ankle pinned to the ground by the machine. She sustained minor injuries. The operator, who was thrown or jumped from the operator's seat, landed with his head caught between the overhead guard and the ground. He was pronounced dead at the scene.^{3,13} U.S. law forbids employees under the age of 18 to operate power-driven hoisting machines, including forklifts.¹⁴



Prevention recommendations

To prevent work-related injury and illness, young workers, employers, parents and educators should stay informed and maintain open lines of communication about workplace safety issues.

YOUNG WORKERS AND EMPLOYERS

- » Know your rights. Young workers have the same right to a safe work environment as adults. These rights are not limited to training about health and safety issues; they also include fair pay and freedom from racial discrimination and sexual harassment.
- » Know the laws. State and federal laws exist to protect young workers from exposure to potentially hazardous situations in the workplace, and laws differ depending on age, industry, and whether or not school is in session. For instance, 14- to 15-year-olds in Oregon may work a maximum of 18 hours per week when school is in session, while 16- to 17-year-olds may work up to 44 hours per week anytime of the year. Young workers and employers should check the regulations for their specific circumstances, and be familiar with which jobs are permitted. For more information about specific regulations, see the “Additional resources” section.
- » Identify workplace hazards and take precautions. Industries vary in the types of hazards involved. Both employers and employees must be aware of the specific hazards of their jobs. The employer should provide training in safe work practices, adequate supervision of young workers performing hazardous tasks, and necessary safety equipment.

For help identifying the hazards in your workplace, contact the Consultation Services section of the Oregon Occupational Safety and Health Division at www.orshea.org/forms/consufm.html for a confidential and free consultation. Workers' compensation insurance companies or private safety and health professional firms may also be helpful.

About OWIIPP

The Oregon Worker Illness and Injury Prevention Program (OWIIPP) in the Oregon Department of Human Services, Public Health Division has been identifying and preventing work-related illnesses, injuries and deaths for nearly 20 years. Through funding from the National Institute for Occupational Safety and Health, the program conducts surveillance to identify patterns of illness and injury. OWIIPP also works with partners to address concerns related to priority conditions, populations, occupations and industries.

OWIIPP focuses on burn injuries, acute pesticide poisonings, work-related asthma, musculoskeletal disorders and other illnesses and injuries. The program is currently collecting data on 19 occupational health indicators, which are measures of work-related illnesses, injuries or factors associated with worker health. Examples include counting the number of work-related deaths and work-related pesticide poisonings. OWIIPP also conducts work-related burn injury surveillance and works with partners to reduce the number of burn injuries in the workplace.

EMPLOYERS

- » Be aware of young employees. Employers should be conscious that young workers may need more training and supervision than adults. Be sure to provide adequate training and instructions to managers who will supervise young workers.
- » Create an accident prevention program. Employers should create accident prevention programs whether or not they employ young workers; however, it is especially important to review specific accident prevention guidelines with young workers because they may not be familiar with safe work practices.

PARENTS

- » Be aware of your child's work environment. This includes knowing the name and contact information of your child's employer and place of work, being aware of the type of work involved and what training and supervision are provided, and being alert for signs of fatigue or stress as your child juggles the responsibilities of school, work, home and social life.

EDUCATORS

- » Talk to your students. Include worker safety in your school curriculum, and set a good example by ensuring that all school-based work programs adhere to high standards of safety.

Conclusions

In 2005, the national rate of work-related injuries among adolescent workers (aged 15–17 years) was 4.4 injuries per 100 full-time equivalents.¹⁵ The U.S. Public Health Service has a Healthy People 2010 objective to reduce work-related injuries among adolescent workers to 3.4 injuries per 100 full-time equivalents by 2010, a 30 percent improvement from 1997.¹⁶ Young workers, employers, parents and educators all have important parts to play in helping achieve this goal:

- » Young workers should stay informed about workplace hazards and their rights to a safe work environment.
- » Employers should reinforce this knowledge by providing adequate training and supervision for all potentially dangerous tasks.
- » Parents should encourage safe behavior by asking children about their workplaces.
- » Educators should include worker safety as part of school curricula.

By working together to communicate workplace safety information, we can create a safer working environment for young workers.

Additional resources

General resources

Young workers: General information

The Center for Research on Occupational and Environmental Toxicology has provided this useful compilation of resources for young workers, employers, parents and educators in English and Spanish. The list includes links to fact sheets, training resources and industry-specific information.

Available at URL: www.ohsu.edu/croetweb/links.cfm?topicID=40

Wage and Hour Division, U.S. Department of Labor

The Wage and Hour Division of the U.S. Department of Labor provides fact sheets, publications, Web tools and more that lay out the rules about employing youth. These resources are tailored for educators, employers, parents and young workers.

Available at URL: www.dol.gov/esa/whd/childlabor.htm

Resources for young workers

Young Workers Stay Alive on the Job!

This is a brochure from the Oregon Fatality Assessment and Control Evaluation (OR-FACE) program. It provides examples of recent young worker fatalities and lists strategies for avoiding similar incidents in the workplace.

Available at URL: www.ohsu.edu/croet/face/reports/YoungWorkerFinal.pdf

Youth 2 Work: Teen workers

This Web site by the Occupational Safety and Health Administration (OSHA) provides a list of workplace rights specifically geared to the concerns of young workers.

Available at URL: www.osha.gov/SLTC/teenworkers/teenworkers.html

You've Got Your Whole Life Ahead of You

This is a brochure published by Oregon-OSHA to educate young workers (aged 14-17 years) about the hours and jobs that different age groups are allowed to work. It also gives tips about how to keep safe on the job.

Available at URL: www.orosha.org/pdf/pubs/2413.pdf

Resources for employers

Employment of Minors

This brochure from the Oregon Bureau of Labor and Industries informs employers of the tasks their young employees are allowed to perform.

Available at URL: www.oregon.gov/BOLI/WHD/CLU/docs/employmentminorsbrochure2008.pdf

Accident Prevention Program

This site from the Washington State Department of Labor and Industries provides guidelines for employers to create accident prevention programs, including an extensive list of sample accident prevention programs for different types of industries.

Available at URL: www.lni.wa.gov/safety/basics/Programs/Accident/

Resources for parents

Parent Safety and Health Checklist

This checklist created by the Federal Network for Young Worker Safety and Health is designed for parents to use with their teens before they look for work and after they have received job training. The checklist also helps identify questions or topics not covered in the teenagers' training or orientation.

Available at URL: www.osha.gov/SLTC/teenworkers/parent_checklist.html

Resources for educators

Youth@Work: Talking Safety Oregon

This is a curriculum for teaching young workers about occupational safety and health. It is designed for classroom use and produced by the National Institute for Occupational Safety and Health.

Available at URL: www.cdc.gov/niosh/talkingsafety/states/or/

NIOSH Safety Checklist Program for Schools

The National Institute for Occupational Safety and Health has developed this safety checklist program in order to promote safety in schools with career-technical programs. It contains safety checklists for a wide variety of common hazards, from air compressor tanks to chemical exposures to woodworking equipment.

Available at URL: www.cdc.gov/niosh/docs/2004-101/default.html

References

1. Light A. 1995. High school employment: National Longitudinal Survey discussion paper. Report No. NLS 95-25. Washington, DC: U.S. Department of Labor, p.iii.
2. Steinberg L, Cauffman E. 1995. The impact of employment on adolescent development. In: Vasta R, ed. *Annals of child development* (11). Philadelphia, PA: Jessica Kingsley Publishers, p. 136.
3. National Institute for Occupational Safety and Health (NIOSH). 2003. NIOSH alert: Preventing deaths, injuries, and illnesses of young workers. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2003-128.
4. U.S. Bureau of Labor Statistics. 2000. Report on the youth labor force. Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics, pp. 58-67.
5. Bowling MJ, Runyan C, Miara C, Davis L, Rubenstein H, Delp L, Gonzalez-Arroyo M. 1998. Teen workers' occupational safety: Results of a four school study. Poster at the 4th World Conference on Injury Prevention and Control, Amsterdam, the Netherlands, May 17-20, 1998.
6. Massachusetts Department of Public Health. 1998. Work-related injuries to teens. Newsletter from the Teens at Work: Injury Surveillance and Prevention Project. Boston, MA: Occupational Health Surveillance Program.
7. Runyan CW, Zakocs R. 2000. Epidemiology and prevention of injuries among adolescent workers in the United States. *Annu Rev Public Health*. 21:247-269.
8. Castillo DN, Davis L, Wegman DH. 1999. Young workers. *Occup Med* 14(3):519-36.
9. National Research Council, Institute of Medicine. 1998. *Protecting youth at work: Health, safety, and development of working children and adolescents in the United States*. Washington, DC: National Academy Press.
10. Centers for Disease Control and Prevention. 2006. Nonfatal occupational injuries and illnesses among workers treated in hospital emergency departments – United States, 2003. *MMWR* 55(16):449-452.
11. NIOSH. NIOSH safety and health topic: young worker safety and health. NIOSH. Available at URL: www.cdc.gov/niosh/topics/youth/, accessed July 14, 2008.
12. NIOSH. 2001. Seventeen-year-old bagger at retail grocery store suffers amputation while operating a meat grinder – Pennsylvania. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Fatality Assessment and Control Evaluation (FACE) Report No. 2001-05.
13. NIOSH. 2001. Seventeen-year-old laborer at salvage lumber operation crushed by forklift that tipped over – New York. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Fatality Assessment and Control Evaluation (FACE) Report No. 2000-22.
14. U.S. Department of Labor. 2008. Fact sheet No. 43: Youth employment provisions of the Fair Labor Standards Act (FLSA) for nonagricultural occupations. Washington, DC: U.S. Department of Labor, Employment Standards Administration, Wage and Hour Division. Available at URL: www.dol.gov/esa/whd/regs/compliance/whdfs43.pdf, accessed August 4, 2008.
15. Department of Health and Human Services (DHHS). 2008. Healthy People 2010. Progress review: Occupational safety and health. Available at URL: www.healthypeople.gov/Data/2010prog/focus20/default.htm, accessed August 4, 2008.
16. DHHS. 2000. Objective 20: Occupational safety and health. In *Healthy People 2010*. 2nd ed. With understanding and improving health. 2 vols. Washington, DC: U.S. Government Printing Office. Available at URL: www.healthypeople.gov/Document/tableofcontents.htm, accessed August 4, 2008.