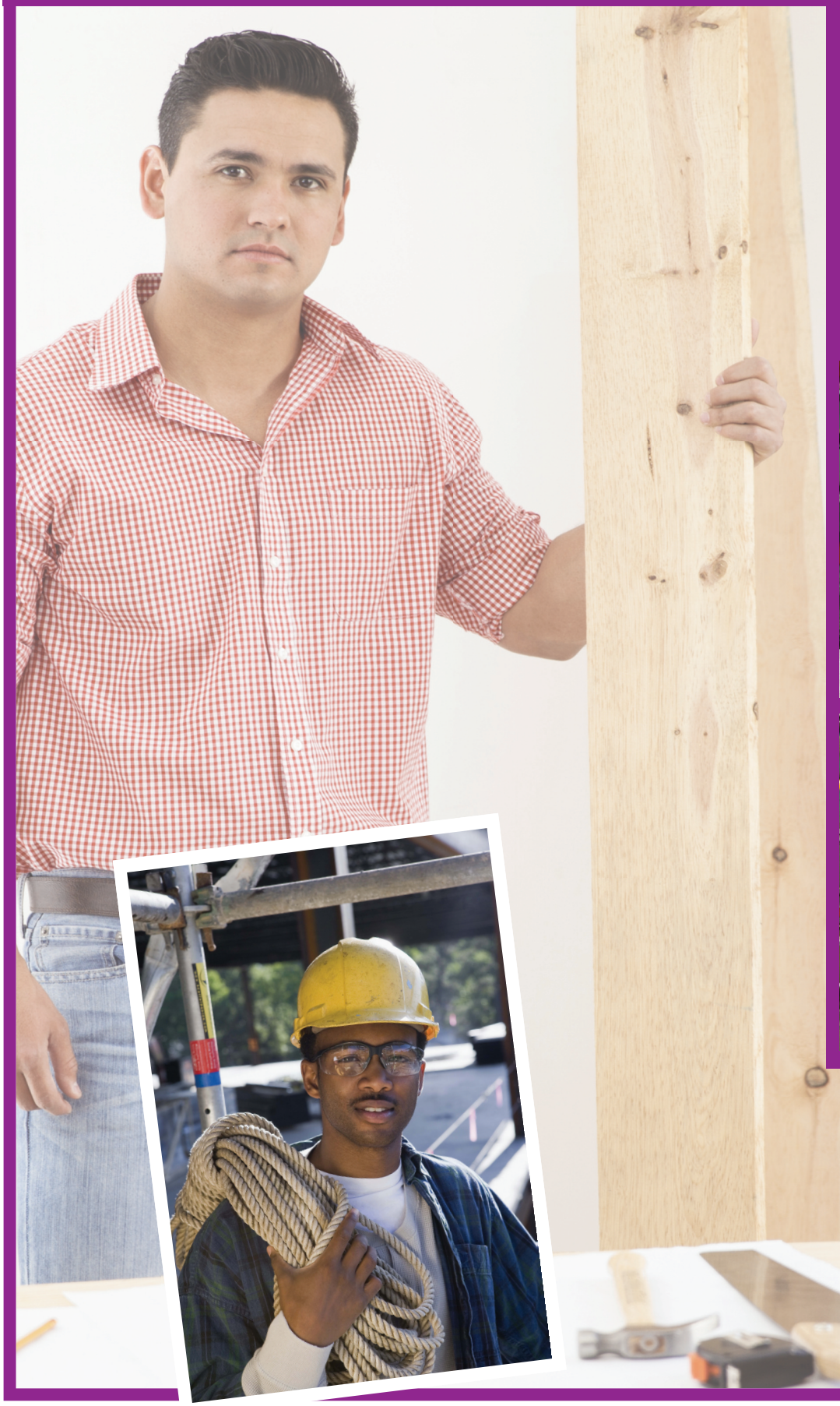
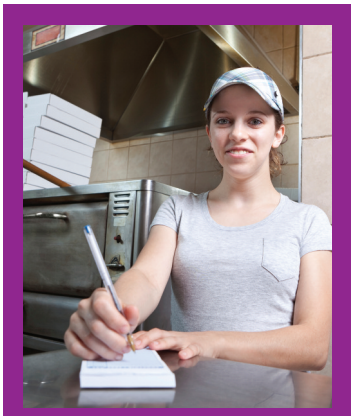
Young Workers in Florida



Florida HEALTH

INTRODUCTION

Studies have shown that younger workers have a high risk of on-the-job injury due to factors such as attitude (invincibility), lack of safety training, low job control (e.g., fear of speaking out, replaceability), unfamiliarity with workplace rights, inexperience, and working dangerous jobs[1, 2]. Younger workers, 16 to 24 years old, also have different employment patterns than older workers. They tend to work fewer hours and are hired into different occupations than older workers, which affects their exposures.



METHODS

Data sources for this analysis included the Florida Agency for Health Care Administration's inpatient hospitalization and emergency department (ED) databases, the Bureau of Labor Statistics' (BLS) Survey of Occupational Injuries and Illnesses (SOII) data set, the BLS' Census of Fatal Occupational Injuries and Illnesses (CFOI), and the BLS' Current Population Survey (CPS, the source for denominator data). All data analyzed were for the year 2010 with the exception of the CFOI analysis, which combined 2009 and 2010 data to overcome issues with small numbers.

Young workers are defined as 16-to 24-year-olds, which can be further divided into teen workers (16 to 19 years) and young adults (20 to 24 years). Young workers were compared to workers 25 to 64 years of age. Race/ethnicity was categorized as non-Hispanic white, non-Hispanic black, and Hispanic. Workers of other race/ethnicity groups were not included.

Hospital Data

Both Florida hospitalization data sets (inpatient hospitalizations and ED) contain records associated with a hospital visit. If workers' compensation was listed as the primary payer, a hospital visit was considered work-related. No conditions were excluded.

SOII

The SOII is an annual survey conducted by the BLS that estimates the number of non-fatal work-related injuries and illnesses based on Occupational Safety and Health Administration (OSHA) logs kept by employers. Employers are required to record all workplace injuries and illnesses involving days away from work. The estimates cover the majority of private sector industries. Farms with fewer than 11 employees, self employed workers, and household workers are not included in the SOII data. State and local government workers were included in the analysis.

CFOI

The CFOI is an annual, comprehensive count of work-related fatal injuries that utilizes multiple data sources, such as death certificates, state workers' compensation records, news media and OSHA reports. To be included in the CFOI, a fatality must be verified in at least two independent data sources.

CPS

The denominator data for the rates calculated in this report were obtained from the CPS. The denominator consists of full-time equivalents (FTEs), meaning that FTEs were used as the denominator in this analysis instead of number of employed persons due to the higher percentage of part-time workers among the younger age groups. An FTE is defined as a person who works 40 hours a week, 50 weeks of the year.

RESULTS

Demographics

Table 1 shows the size of the Florida workforce by age group. Among 16-to 19-year-olds, approximately 70% of the workforce was employed part-time compared to only 12% in the 25-to 64-year age group.

Table 1. Workforce by Age Group, Florida 2010

	16 to 19 Years	20 to 24 Years	25 to 64 Years
% Employed Part-Time[1]	70%	38%	12%
Number of Employed Persons	182,254	612,557	6,889,832
Full-Time Equivalents (FTEs)[2]	113,930	504,347	6,746,633

[1] **Part-time** defined by the Bureau of Labor Statistics as usually employed less than 35 hours per week

[2] **FTE** is defined by the Bureau of Labor Statistics as working 2,000 hours in a year which is equivalent to a 40-hour workweek over 50 weeks during the year. Workers employed 35 to 39 hours per week are considered to be employed 'full-time' but are counted as less than one full-time equivalent.

Data Source: Current Population Survey

A higher proportion of workers were male across all age groups (Table 2). Overall, 22% of the Florida workforce was Hispanic. Hispanics made up a higher proportion of the younger age groups of workers.

Table 2. Full-Time Equivalent Workers by Gender and Race/Ethnicity, Florida, 2010

	16 to 19 Years		20 to 24 Years		25 to 64 Years	
	Number	%	Number	%	Number	%
Gender						
Male	60,914	53.5%	254,337	50.4%	3,704,831	54.9%
Female	53,016	46.5%	250,010	49.6%	3,041,802	45.1%
Race/Ethnicity						
Non-Hispanic White	62,494	54.9%	272,714	54.1%	4,190,434	62.1%
Non-Hispanic Black	16,437	14.4%	85,893	17.0%	893,702	13.2%
Hispanic	32,621	28.6%	131,170	26.0%	1,418,696	21.0%
Other	2,378	2.1%	14,570	2.9%	243,801	3.6%

Data Source: Current Population Survey

Non-Fatal Work-Related Injuries

Using SOII data, we observed 50,280 cases of non-fatal injuries and illnesses involving days away from work among Florida workers aged 16 to 64 years (Table 3). The rate of non-fatal injuries declined with age. The rate among 16-to 19-year-olds was almost double that of 25-to 64-year-olds (1,105.9 vs. 660.2 per 100,000 FTEs, respectively). The majority of the workforce was male across all age groups. Females in the 16-to 19-year-old age group had a higher rate of work-related injuries and illnesses involving days away from work than males. This pattern differs from the older age groups where male workers had higher non-fatal injury rates than female workers. The non-fatal injury rate declined with age for females; however, for males, the highest rate was seen in the 20-to 24-year-old age group.

The rate for 20-to 24-year-old non-Hispanic white workers was almost half of the rate compared to 16-to 19-year-olds (597.7 vs. 1,120.1 per 100,000 FTEs, respectively). For non-Hispanic black and Hispanic workers, 16-to 19-year-olds had the lowest injury rates.

Table 3. Non-Fatal Injuries and Illnesses Involving Days Away from Work, Florida, 2010

	Age Group							
	16 to 19		20 to 24		25 to 64		All	
	Number	Rate[1]	Number	Rate[1]	Number	Rate[1]	Number	Rate[1]
All	1,260	1,105.9	4,480	888.3	44,540	660.2	50,280	682.7
Gender								
Male	530	870.1	2,730	1073.4	26,950	727.4	30,210	751.5
Female	740	1,395.8	1,750	700.0	17,030	559.9	19,520	583.6
Race/Ethnicity								
Non-Hispanic White	700	1,120.1	1,630	597.7	17,430	415.9	19,760	436.6
Non-Hispanic Black	50	304.2	420	489.0	5,130	574.0	5,600	562.2
Hispanic	160	490.5	770	587.0	8,000	563.9	8,930	564.3

[1] Rate per 100,000 FTEs

Data Sources: Survey of Occupational Injuries and Illnesses and Current Population Survey

The highest rate of non-fatal injury was seen among non-Hispanic white 16-to 19-year old workers.

Workers of different ages have diverse employment patterns. Younger workers in particular may not meet minimum age or training requirements for some occupations. For example, in Florida an individual must be at least 19 years old to become a police officer.

Table 4 compares the occupational groups with the highest number of non-fatal injuries and illnesses involving days away from work by age group. Non-fatal injuries and illnesses are concentrated in varying occupations for each age group. The highest number of injuries and illnesses for 16-to 19-year-olds occurred among agricultural workers (280 cases) and the highest number of injuries and illnesses for 20-to 24-year-olds was among nursing, psychiatric, and home health aides (530 cases).

Table 4. Occupations with the Highest Number of Non-Fatal Injuries and Illnesses Involving Days Away From Work, Florida, 2010

	16 to 19 Years		20 to 24 Years		25 to 64 Years	
Rank	Occupation	# of Cases	Occupation	# of Cases	Occupation	# of Cases
1	Agricultural Workers	280	Nursing, Psychiatric & Home Health Aids	530	Building & Cleaning Workers	2,770
2	Retail Salespersons	180	Cooks	350	Drivers/SalesWorkers & Truck Drivers	2,380
3	Fast Food & Counter Workers	110	Police Officers	260	Laborers & Materials Movers	2,280
4	Cooks	80	Building & Cleaning Workers	210	Nursing, Psychiatric & Home Health Aids	1,690
5	Cashiers	60	Laborers & Materials Movers	200	Police Officers	1,670

Data Sources: Survey of Occupational Injuries and Illnesses and Current Population Survey

Non-fatal injuries and illnesses are concentrated in varying occupations for each age group.

Table 5 shows the types of non-fatal injuries involving days away from work. Non-fatal illnesses are not included in the table. Overall, 16-to 19-year-olds had the highest rate of injuries (925.9 per 100,000 FTEs). The injury rate for 16-to 19-year-olds exceeded that of the other age groups for sprains/strains/tears, burns, intracranial injuries, and crushing injuries. The injury rate for 20-to 24-year-olds exceeded that of the other age groups for open wounds, surface wounds and bruises, and back pain.

Table 5 . Type of Non-Fatal Injuries Involving Days Away from Work, Florida, 2010

	Age Group					
	16 to 19 Years		20 to 24 Years		25 to 64 Years	
Type of Injury	**Number**	**Rate[1]**	**Number**	**Rate[1]**	**Number**	**Rate[1]**
All traumatic injuries and disorders	1,240	925.9	4,280	848.6	41,190	610.5
Specific Types of Injuries						
Traumatic injuries to bones, nerves, spinal cord	40	29.9	210	41.6	3,450	51.1
Dislocations	-	-	60	11.9	190	2.8
Fractures	30	22.4	120	23.8	3,230	47.9
Traumatic injuries to muscles, tendons, ligaments, joints, etc.	570	425.6	1,290	255.8	16,840	249.6
Sprains/ strains/ tears	570	425.6	1,290	255.8	16,790	248.9
Open wounds	210	156.8	1,040	206.2	4,440	65.8
Amputations, except fingertip	-	-	-	-	160	2.4
Amputations, fingertips	-	-	-	-	100	1.5
Animal or insect bites	30	22.4	150	29.7	380	5.6
Cuts, lacerations	180	134.4	770	152.7	3,240	48.0
Punctures, except bites	-	-	70	13.9	530	7.9
Surface wounds and bruises	70	52.3	460	91.2	3,820	56.6
Abrasions, scratches	-	-	30	5.9	490	7.3
Bruises, contusions	70	52.3	400	79.3	2,930	43.4
Foreign bodies (superficial splinters, chips)	-	-	30	5.9	360	5.3
Burns	70	52.3	130	25.8	840	12.5
Chemical burns	20	14.9	-	-	210	3.1
Heat burns, scalds	60	44.8	120	23.8	620	9.2
Intracranial injuries	20	14.9	-	-	160	2.4
Effects of heat and light	-	-	30	5.9	160	2.4
Other traumatic injuries and disorders	180	134.4	890	176.5	8,310	123.2
Asphyxiations/strangulations, suffocations	-	-	-	-	70	1.0
Electrocutions and electric shocks	-	-	-	-	20	0.3
Other poisonings and toxic effects	-	-	-	-	160	2.4
Crushing injuries	20	14.9	30	5.9	300	4.4
Back pain, hurt back	30	22.4	360	71.4	1,460	21.6
Soreness, pain, hurt, except the back	120	89.6	-	-	6,020	89.2

[1] Rate per 100,000 FTEs

Technical Note: "-" indicates data are either zero or unavailable due to small numbers.

Data Sources: Survey of Occupational Injuries and Illnesses and Current Population Survey

Table 6 shows the incident type for non-fatal injuries and illnesses involving days away from work. Younger workers had a higher rate of injury for all incident types with the exception of falls. Younger workers have a lower rate of falls and jumps to a lower level, but a higher rate than 25-to 64-year-old workers in falls on the same level. Workers aged 16 to 19 years had the highest rates of injuries related to contact with objects and equipment, exposure to harmful substances and environments, and assaults and violent acts committed by other people. The incident subtype 'caught in or compressed by equipment of objects' (254.5 per 100,000 FTES), was particularly high compared to the other age groups (23.8 per and 12.2 per 100,000 FTES in 20-to 24 and 25-to 64-year-olds respectively). Workers aged 20 to 24 years old had the highest rates of injuries caused by overexertion, highway accidents, and assaults by animals.

Table 6. Incident Type for Non-Fatal Injuries Involving Days Away From Work, Florida, 2010

	Age Group					
	16 to 19 Years		20 to 24 Years		25 to 64 Years	
Incident Type	**Num.**	**Rate[1]**	**Num.**	**Rate[1]**	**Num.**	**Rate[1]**
Contact with Objects and Equipment	720	632.0	1,710	339.1	12,020	178.2
Struck against object or equipment	230	201.9	640	126.9	5,440	80.6
Struck by object	200	175.5	890	176.5	5,540	82.1
Caught in or compressed by equipment or objects	290	254.5	120	23.8	820	12.2
Rubbed or abraded by friction or pressure	-	0.0	40	7.9	30	0.4
Falls	150	131.7	610	120.9	9,450	140.1
Falls to lower level	-	-	90	17.8	1,800	26.7
Jumps to lower level	-	-	-	-	2,540	37.6
Falls on same level	140	122.9	480	95.2	4,980	73.8
Bodily Reaction and Exertion	230	201.9	1,390	275.6	16,420	243.4
Bodily reaction	110	96.6	480	95.2	6,420	95.2
Overexertion	110	96.6	870	172.5	8,730	129.4
Repetitive motion	-	-	20	4	710	10.5
Harmful Substances or Environments	90	79.0	250	49.6	2,600	38.5
Contact with electric current	-	-	-	-	20	0.3
Contact with temperature extremes	60	52.7	150	29.7	840	12.5
Exposure to caustic, noxious or allergenic substances	30	26.3	70	13.9	1,510	22.4
Transportation Incident	20	17.6	240	47.6	1,840	27.3
Highway accident	-	-	180	35.7	1,150	17.0
Non-highway transportation Incident (except rail, air, water)	-	-	40	7.9	390	5.8
Fires and Explosions	-	-	-	-	-	-
Assaults and Violent Acts	50	43.9	230	45.6	1,280	19.0
Assaults and violent acts by person(s)	20	17.6	50	9.9	770	11.4
Assaults by animals	30	26.3	160	31.7	510	7.6

[1] Rate per 100,000 FTEs

Technical Note: "-" indicates data are either zero or unavailable due to small numbers.

Data Sources: Survey of Occupational Injuries and Illnesses and Current Population Survey

The work-related fatality rate was between two and three per 100,000 FTEs with little difference between age groups (**Table 7**).

Table 7. Number and Rate of Fatalities, Florida, 2009 and 2010

	<20 Years[1]	20 to 24 Years	25 to 64 Years	Overall
Number of Fatalities	7	23	400	430
Rate per 100,000 FTEs	2.7	2.2	3.0	2.9

[1] Category is 'less than 20' because more specific information on age was not available. Denominator was 16 to 19 year olds.
Data Sources: Census of Fatal Occupational Injuries and Current Population Survey

Hospitalization Rates

The highest rate of work-related hospitalizations occurred in the 25-to 64-year-old age group (Table 8). The hospitalization rate increased with age which differs from non-fatal work-related injuries involving days away from work (**Table 3**), showing a decline with age. The hospitalization rate was highest in the 25-to 64-year-old age group for all race/ethnicity groups.

Table 8. Work-Related Hospitalizations, Florida, 2010

	Age Group							
	16 to 19 Years		20 to 24 Years		25 to 64 Years		All	
	Number	Rate[1]	Number	Rate[1]	Number	Rate[1]	Number	Rate[1]
All	54	47.4	247	49.0	7,202	106.7	7,503	101.9
Gender								
Male	45	73.9	212	83.4	5,270	142.2	5,527	137.5
Female	9	17.0	35	14.0	1,932	63.5	1,976	59.1
Race/Ethnicity								
Non-Hispanic White	26	41.6	135	49.5	4,706	112.3	4,867	107.5
Non-Hispanic Black	6	36.5	23	26.8	865	96.8	894	89.8
Hispanic	19	58.2	76	57.9	1,327	93.5	1,422	89.9

[1] Rate per 100,000 FTEs
Data Sources: Florida Agency for Health Care Administration inpatient hospitalizations database and Current Population Survey.

The hospitalization rate was highest in the 25-to 64-year-old age group for all race/ethnicity groups.

Emergency Department Visits

Younger workers had a higher rate of ED visits than those in the 25-to 64-year age group (Table 9). This contrasts with work-related hospitalizations, where the 25-to 64-year-old age group had the highest rate. Males had a higher ED visit rate than females for all age groups. ED visit rates declined with age for both genders. Similar to non-fatal injuries and illnesses (**Table 3**), the highest rate was among non-Hispanic white workers in the 16-to 19-year-old age group.

Table 9. Work-Related Emergency Department Visits, Florida, 2010

	Age Group							
	16 to 19 Years		20 to 24 Years		25 to 64 Years		All	
	Number	Rate[1]	Number	Rate[1]	Number	Rate[1]	Number	Rate[1]
All	2,224	1,952.1	7,906	1,567.6	61,329	909.0	71,459	970.3
Gender								
Male	1,350	2,216.2	4,804	1,888.8	35,939	970.1	42,093	1,047.1
Female	874	1,648.6	3,102	1,240.7	25,390	834.7	29,366	878.0
Race/Ethnicity								
Non-Hispanic White	1,507	2,411.4	4,876	1,788.0	37,640	898.2	44,023	972.7
Non-Hispanic Black	271	1,648.8	1,199	1,395.9	9,832	1,100.1	11,302	1,134.7
Hispanic	381	1,168.0	1,532	1,168.0	11,219	790.8	13,132	829.8

[1] Rate per 100,000 FTEs
Data Source: Florida Agency for Health Care Administration emergency department database and Current Population Survey.

DISCUSSION

Differences were seen between the injury and illness patterns of younger workers (16 to 24 years old) compared to older workers (25 to 64 years old). Overall, younger workers in Florida had higher rates of non-fatal injuries and illnesses involving days away from work and ED visits than older workers. However, younger workers had lower rates of work-related inpatient hospitalization. These results are in line with those from previous studies that younger workers have a higher rate of injuries than older workers do, but they tend to be less serious [3, 4, 5].

There were also differences by gender and race/ethnicity. Injury/illness rates in males were higher for all age groups with the exception of non-fatal injuries and illnesses in 16-to 19-year-old females. Data from additional years would need to be examined to determine whether this higher rate is an anomaly or if females in this age group consistently have a higher rate of injuries and illnesses in Florida. The higher rate in females is not consistent with previous studies [6].

For non-fatal injuries and illnesses involving days away from work, rates were highest for non-Hispanic white workers aged 16 to 19 years. Rates declined with age for non-Hispanic white workers, but increased with age for non-Hispanic black and Hispanic workers. Similar to non-fatal injuries, 16-to 19-year-old non-Hispanic white workers had the highest ED visit rates. Hospitalization rates were highest in 25-to 64-year-olds across all race/ethnicity groups.

The occupations with the highest number of non-fatal injuries and illnesses varied by age group. This is not surprising considering that workers of different age groups are concentrated in different occupations. Occupations with high numbers of injuries and illnesses for young workers in Florida were agricultural workers; retail salespersons; nursing, psychiatric and home health aides; and cooks. Due to these differences, interventions focused on young worker injuries should target different occupations than for older workers.

Limitations

Missing Data on Youngest Workers

According to child labor laws in Florida, the legal working age is 14 years, with a few exceptions: entertainers, pages in the Florida Legislature, newspaper delivery, and work in a parent's business in a non-hazardous occupation [7]. A limitation of this study is that only workers aged 16 years or older were included in the analyses (with the exception of work-related fatalities which may include workers 14 and 15 years of age). Age 16 years was chosen as a cutoff point because readily accessible injury and illness employment statistics on workers younger than age 16 was not available.

Work-Relatedness of Hospital and ED Visit Data

Workers' compensation as primary payer was utilized to determine work-relatedness of inpatient hospitalizations and ED visits. Although it is known that not all injured workers who are eligible for workers' compensation choose to file, it is suspected that the youngest workers in particular may file workers' compensation less often than older workers [8].

CONCLUSIONS

The analysis summarized in this report identified differences in work-related injury and illness patterns in Florida's workforce between younger and older age groups. Implementation of intervention and outreach activities focused on lowering occupational injuries and illnesses should incorporate differences between younger and older workers.

For more information, please contact the Florida Department of Health, Division of Disease Control & Health Protection, Bureau of Epidemiology, Occupational Health and Safety Program at 850-245-4401, http://www.floridahealth.gov/healthy-environments/occupational-health/index.htm

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