

Using Traumatic Injury Data to Enhance Occupational Health Surveillance: An Analysis from New York State's Trauma Registry

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Introduction

The New York State (NYS) Trauma Registry (TR) collects information on patients with moderate to severe traumatic injuries treated in one of the 40 designated NYS trauma centers. Trauma centers are required to collect detailed information on the most seriously injured patients who, until October 2015, met certain International Classification of Diseases, 9th revision, Clinical Modification (ICD-9-CM) codes, and ICD-10-CM thereafter. Over 200 variables are collected in the TR, including identification of occupational injuries. Historically, Worker Compensation payer information has been the primary indicator for identifying work-related injury and illness in NYS emergency department and inpatient hospital data. Additional information on comorbidities, date and time of injury, and personal protective equipment use, is also included in the TR. The TR has not been previously utilized in assessing occupational injuries in NYS.

Methods

A descriptive analysis of injuries that were identified using the "Work-Related" field in the NYS TR from 2010 – 2013 was conducted. Cases were limited to those 16 years of age and older. Trauma-related injuries among workers were compared to injuries among non-workers to explore how the characteristics of work-related injuries differ. Data were also stratified by mechanism of injury.

Results

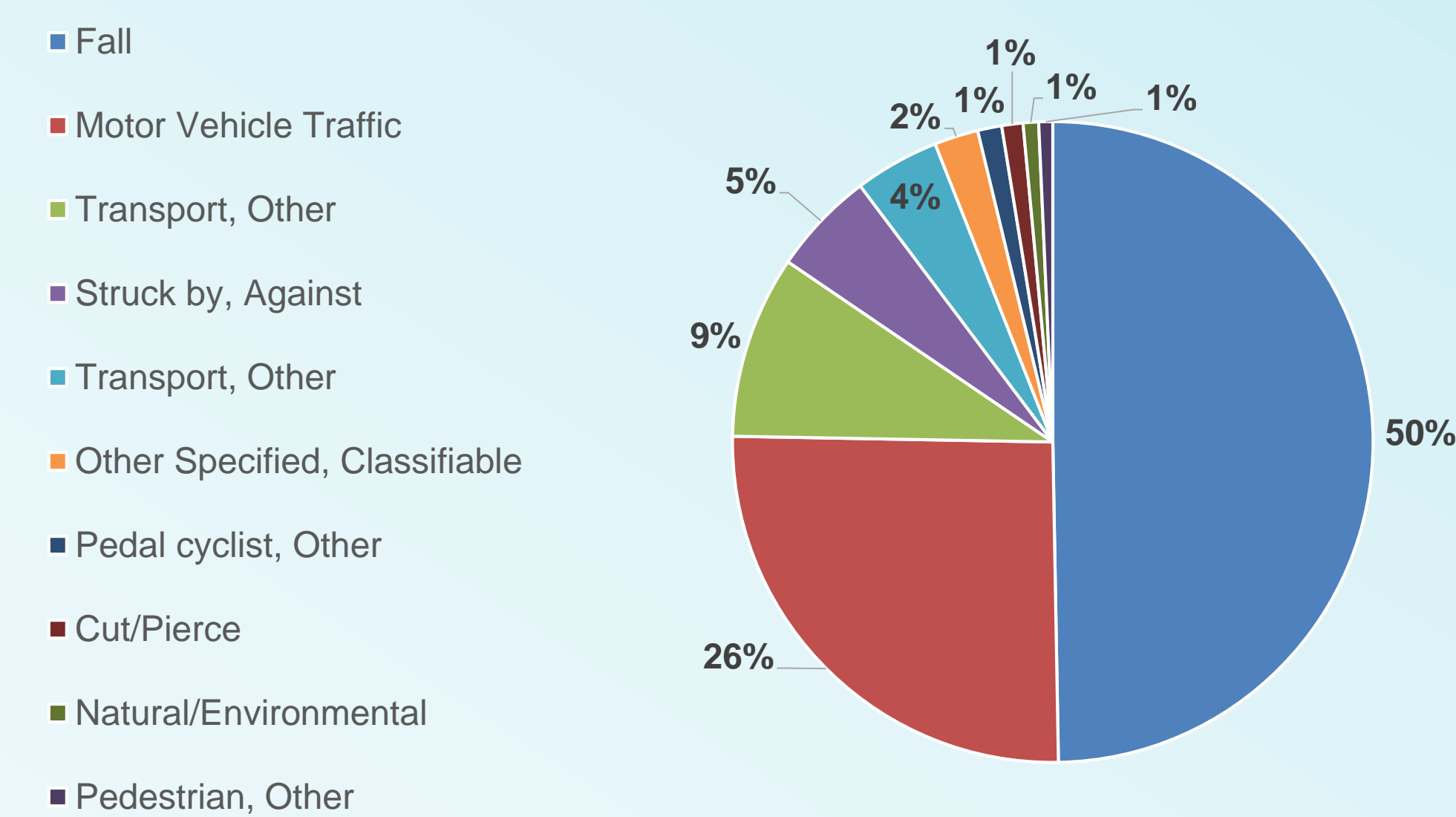
Selected Characteristics –Trauma Center Injuries	Worker		Non-worker	
	Number	Percent	Number	Percent
Average Charge per Patient	\$39,628		\$49,732	
Average Length of Hospital Stay	8 days		8 days	
Percent Traumatic Brain Injury	43%		49%	
Average Injury Severity Score	15.0		15.2	
WC as primary payer	74%		N/A	

Results

All Trauma-related Injuries, 2011-2013	Worker (N=5,078)		Non-Worker (N=57,836)	
	Number	Percent	Number	Percent
Race/Ethnicity				
White Non-Hispanic	2663	52.4%	35675	61.7%
Black Non-Hispanic	960	18.9%	8042	13.9%
Hispanic	828	16.3%	7472	12.9%
Other Non-Hispanic	259	5.1%	2704	4.7%
Hispanic Unknown	195	3.8%	1924	3.3%
Pacific Islander Non-Hispanic	137	2.7%	1721	3.0%
Mixed Race Non-Hispanic	19	0.4%	164	0.3%
Asian Non-Hispanic	5	0.1%	60	0.1%
Unknown Non-Hispanic	12	0.2%	76	0.1%
Sex				
Female	1037	20.4%	20698	35.8%
Male	4041	79.6%	37138	64.2%
Age Group				
16 - 29	1199	23.6%	13238	22.9%
30 - 44	1234	24.3%	8612	14.9%
45 - 59	1368	26.9%	11228	19.4%
60 - 74	671	13.2%	9785	16.9%
75 - 89	490	9.7%	12023	20.8%
>90	116	2.3%	2952	5.1%

Trauma-related injuries are more likely to occur to Black, Non-Hispanic and Hispanic workers than to non-workers. Trauma-related injuries are also more likely to occur to male workers between the ages of 30-59 than to non-workers.

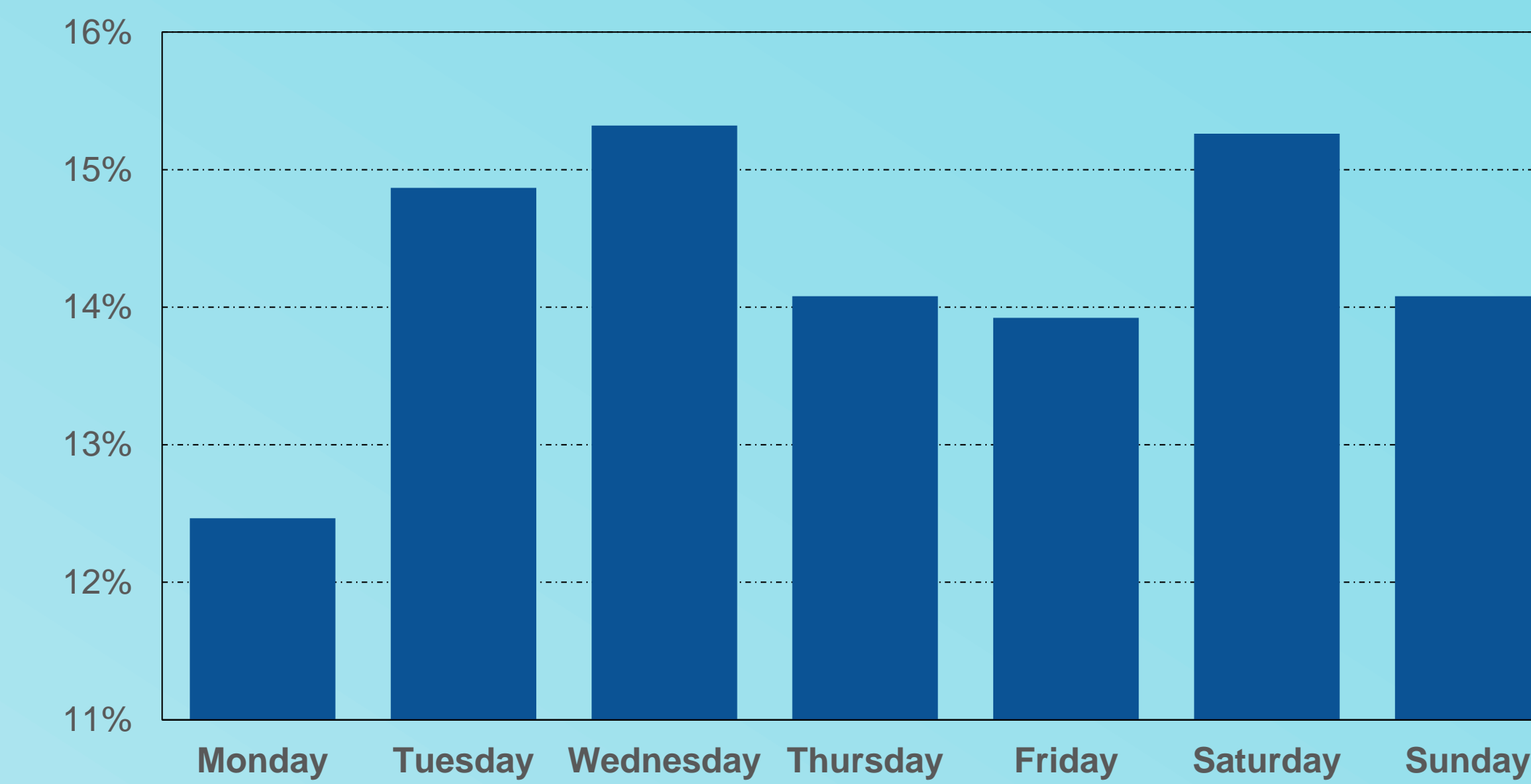
Leading Cause of Trauma-related Unintentional Injury Among Workers, 2010-2013



The rate of trauma related injuries among workers is increasing while the rate of all work-related injury hospitalizations is decreasing.

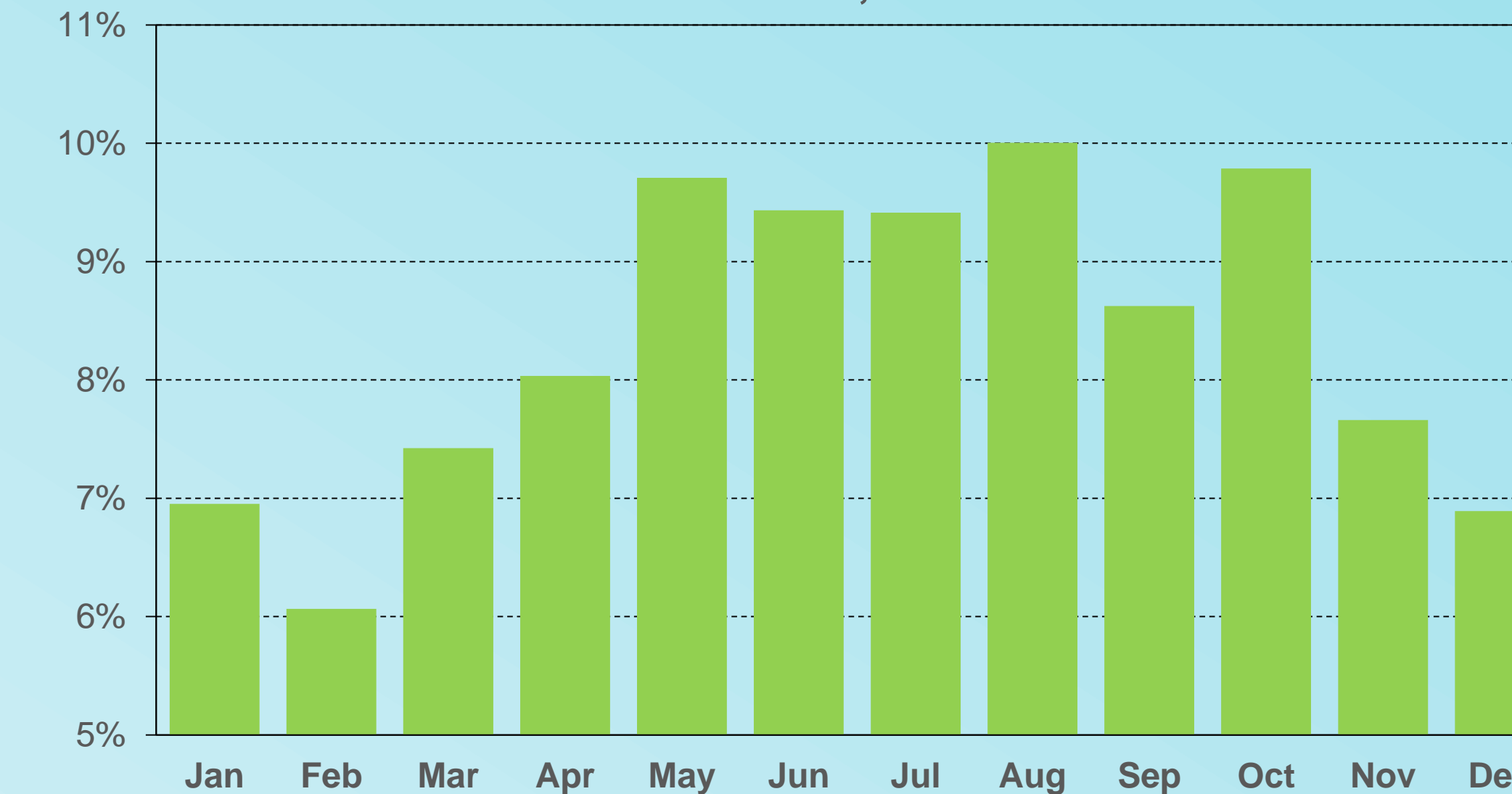
Results

Percent of Trauma-related Injuries Among Workers, by Day of the Week, 2010-2013



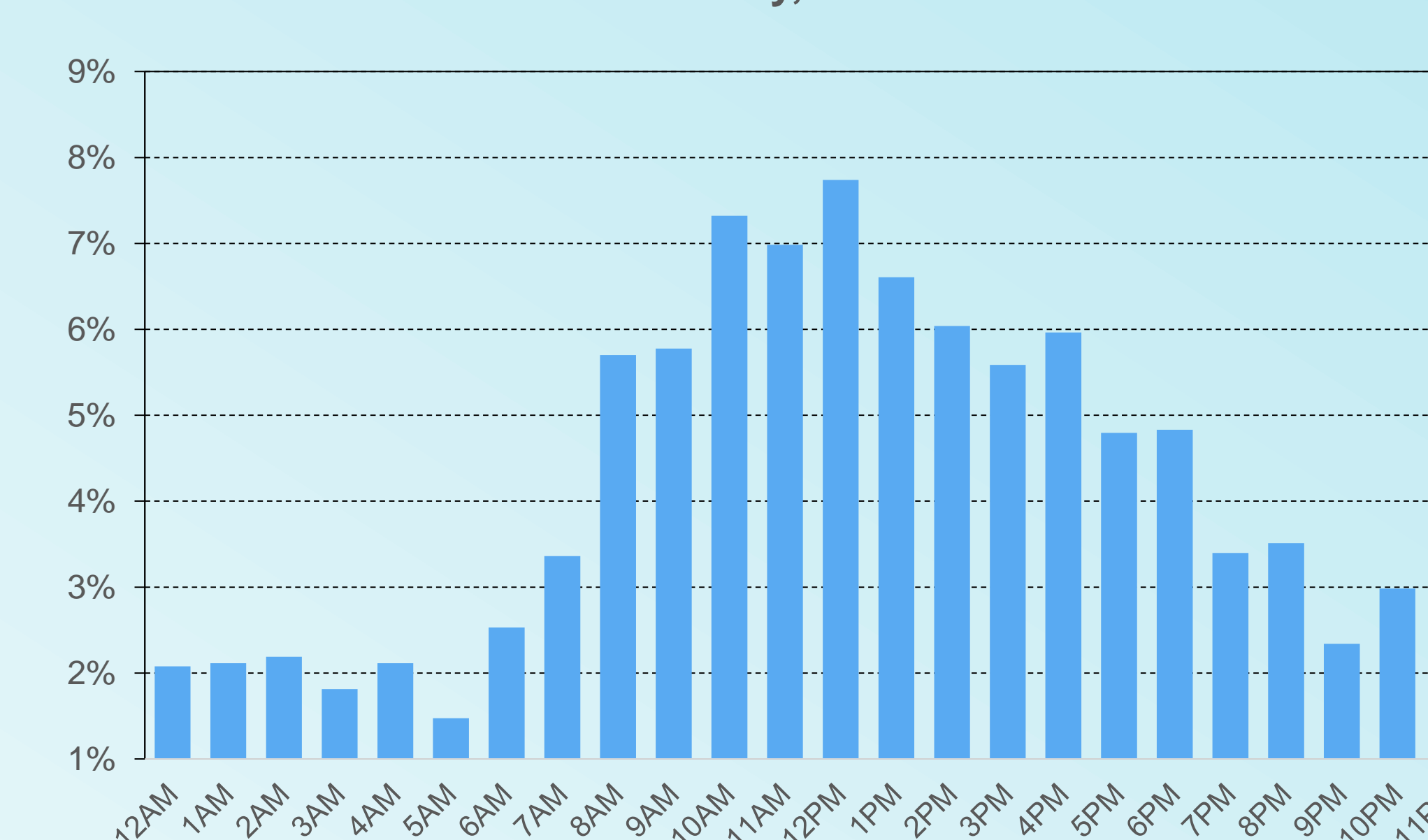
Trauma-related injuries to workers are most likely to occur on Wednesday (15.3%), Saturday (15.3%) and Tuesday (14.9%)

Percent of Trauma-related Injuries Among Workers, by Month of the Year, 2010-2013



Trauma-related injuries to workers are most likely to occur in the months of May (9.7%) June (9.4%), July (9.4%), August (10.0%) and October (9.8%)

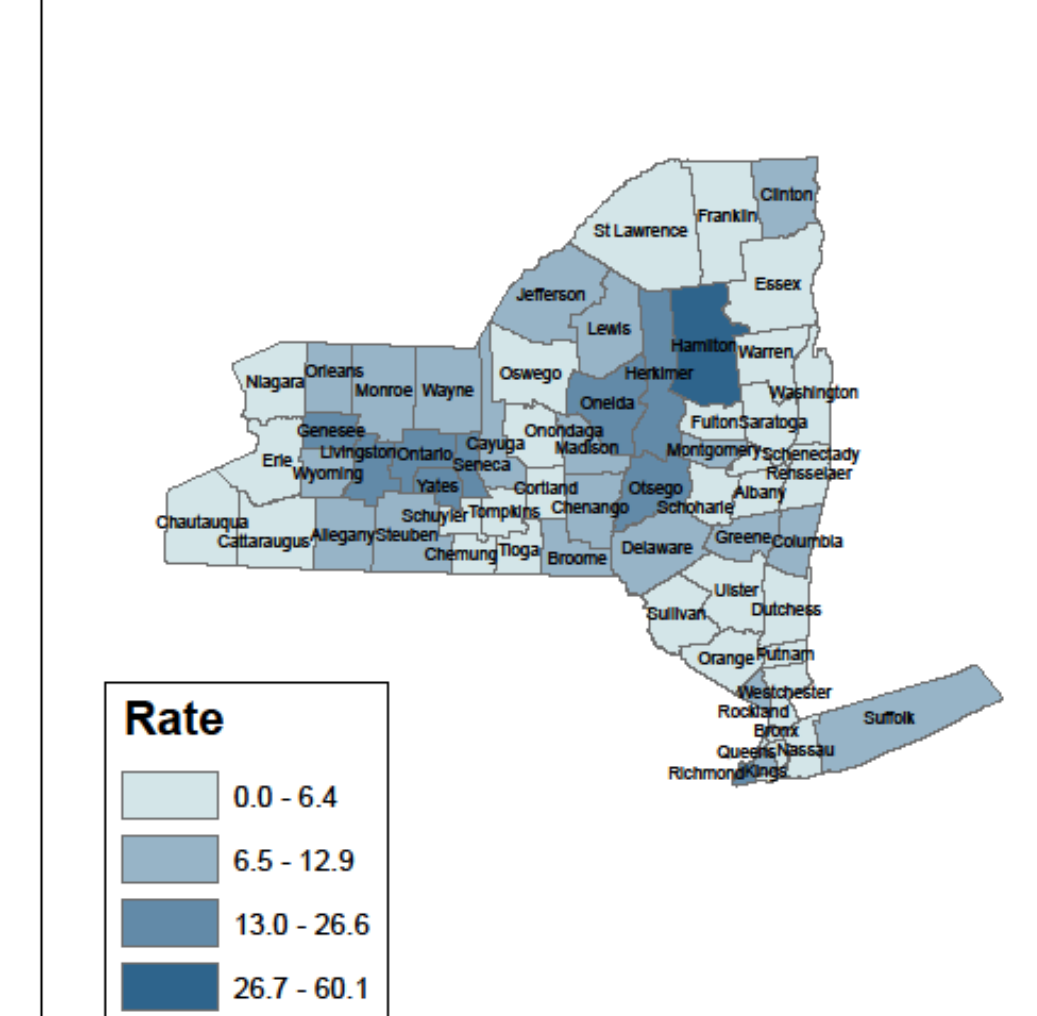
Percent of Trauma-related Injuries to Workers, by Time of the Day, 2010-2013



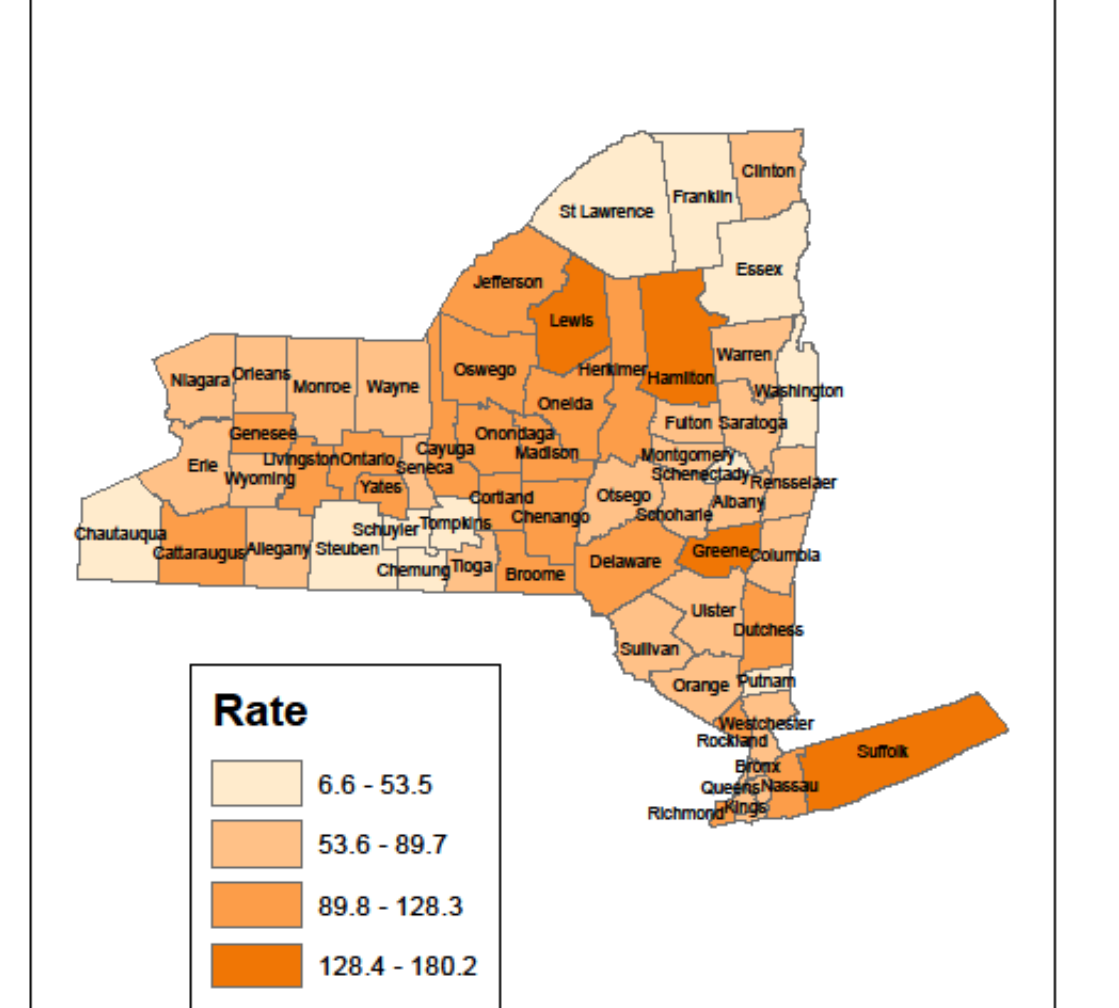
Trauma-related injuries to workers are most likely to occur between the hours of 10 am – 2 pm

Results

Incidence of Trauma-related Injuries to Workers in New York State Residents, Rate by County, 2010-2013



Incidence of Trauma-related Injuries to Non-workers in New York State Residents, Rate by County, 2010-2013



Conclusions

This analysis suggests that the TR is a useful and valuable source of information in identifying and characterizing the most serious occupational injuries. Use of TR data can also aid in identifying severe injuries that are not covered or reported by Worker's Compensation and can help to direct prevention efforts at the state and regional level.