

OREGON PUBLIC HEALTH DIVISION • OREGON HEALTH AUTHORITY

TRAUMATIC INJURIES IN OREGON: 2010–2011

The Oregon Trauma System was established by landmark legislation in 1985 and represents an organized medical delivery system at the local, regional and state levels for coordinating care for patients with traumatic injuries in Oregon. An integral aspect of this system is the Oregon Trauma Registry, which conducts systematic data collection from the 44 trauma hospitals in Oregon. The purpose of the Trauma Registry is to: 1) identify the causes of traumatic injury and recommend prevention activities; and 2) assure timely, quality treatment, education, and research. This *CD Summary* reviews data from 2010–2011 Trauma Registry Report* and provides recommendations to reduce the burden of traumatic injuries in Oregonians.

WHO IS GETTING INJURED?

During 2010–2011, 18,131 patients were entered into the Oregon State Trauma Registry. The highest number of patients occurred in 21–30 year age group, followed by those in the age group ≥71 years. Among trauma system patients, there were twice as many males as females.

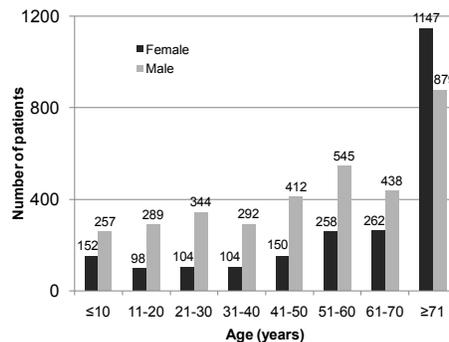
By race, the rate of traumatic injury was highest among African Americans (680.6 per 100,000), followed by whites (460.7), Asian/ Pacific Islanders (256.3) and Native Americans (68.6). By county, the highest occurrence of trauma system patients was observed in Sherman County (2,719.5 per 100,000) and the lowest rate was observed in Malheur County (98.6).

HOW / WHY?

Although injuries can be categorized in multiple ways — where they occur, how they occur, etc. — it is typical to categorize injuries in terms of mechanism and intent. Mechanism (or cause) refers to how the injury occurred — for instance, falling. Intent is classified as unintentional (i.e., “accidental”) or intentional (i.e., violent injury, such as homicide or suicide).

Unintentional Injuries. Falls and motor vehicle traffic crashes were the leading mechanisms of injury. Almost one third of all injuries (35%) were caused by falls. Traumatic fall injuries occur predominantly among older adults (Figure 1). While males experience more traumatic fall injuries in persons <70 years, females outnumber males in the age group ≥71 years.

Figure 1. Traumatic fall injuries by age and sex, 2010–2011, (N = 5,731)



Motor vehicle traffic injuries include those that occur to the occupants, to motorcyclists, and pedestrians. Among the motor vehicle occupant injuries, the highest number occurred among those ages 21–30 years, followed by 11–20 years; males outnumbered females in all age groups (Figure 2). Almost 16% of trauma system patients injured in motor vehicle occupant crashes were not using a seat belt or child safety seat. Pedestrian traffic injuries occurred among 710 trauma system patients. The highest numbers were in persons aged 11–20 years, with males outnumbering females in all ages (Figure 3).

Pedalcyclist (bicyclists), are injured twice as often in crashes not involving motor vehicles than in motor vehicle traffic crashes (679 vs. 312). A total of

Figure 2. Motor vehicle traffic occupant injuries, by age and sex, 2010–2011 (N = 4,964)

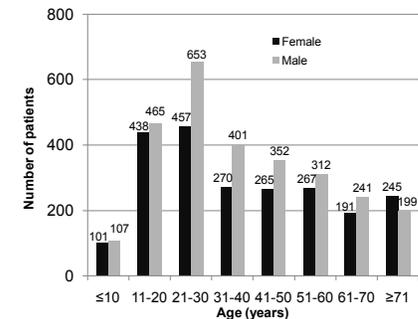
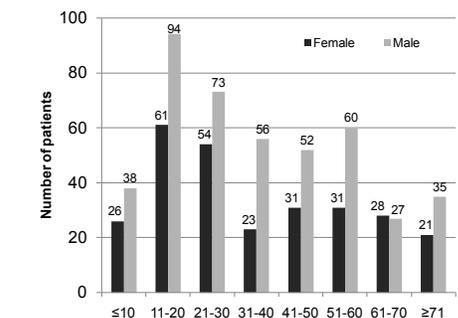


Figure 3. Pedestrians injured in motor vehicle traffic by age and sex, Oregon 2010–2011, (N = 710: unknown 1)



170 (63 percent) adult pedalcyclists were not wearing a helmet when injured.

About seven percent of trauma patients had a work related injury.

Intentional injuries. The most frequent violent injuries were assault (1,333 or 7%) and suicide/suicide attempt (402 or 2%).

HOW BAD?

The Injury Severity Score (ISS) is a system for numerically stratifying injury severity. The ISS system has a range of 1–75 and risk of death increases with a higher score. ISS 16–24 is severe; and >24 is very severe. Highest injury severity scores were seen with motorcycle (29.9); firearm (26.2); fall (25.2); and motor vehicle-pedestrian (25.2) injuries (Table, *verso*).

* <http://public.health.oregon.gov/ProviderPartnerResources/EMSTraumaSystems/TraumaSystems/Documents/reports/otr-report.pdf>



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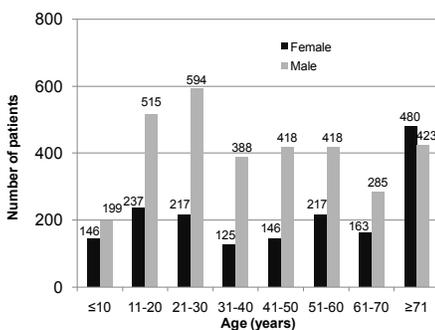
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Table. Injury Severity Score and death rate by mechanism of injury; Oregon, 2010–2011 (N=16,347; unknown 1,784)

Mechanism	ISS>15 (%)	Death Rate (%)
MV-Motorcyclist	29.9	2
Firearm	26.2	8
Fall	25.2	4
MV-Pedestrian	25.2	5
MV-Pedalcyclist	23.8	3
Motor Vehicle	19.4	2
Struck by-Against	19.1	2
Transport-Other	19.0	1

Regardless of mechanism or intent, traumatic brain injury is one of the most severe injuries and has long-term consequences. By age, the highest numbers of traumatic brain injuries are seen in those 11–30 years and those ≥71 years. Excluding the young (≤10 years) and the old (≥71 years), males outnumber females by more than 2:1 (Figure 4).

Figure 4. Traumatic brain injury among trauma system patients, by age and sex, Oregon 2010–2011, (N= 4,971, unknown 11)



ALCOHOL AND DRUGS

Alcohol and drug use are contributing factors to many traumatic injuries. Almost 60% of trauma system patients were screened for alcohol use — 34% tested positive at or above the legal limit of 0.08 percent blood alcohol content. A smaller portion of patients were screened for drug use (26%), among them, 47% tested positive.

PREVENTING TRAUMATIC DEATH AND INJURY

Many trauma deaths are preventable if the injured patient receives effective care from an organized and well-coordinated trauma system. Fewer than 4% of patients in Oregon died in 2010–2011.

Despite the low death rate, traumatic injuries are costly and many of those injured have lifelong disabilities. Changing the physical and social environment, usually through law and policy change, is one of the most effective ways to prevent unintentional traumatic injuries.

Oregon has public policies that prevent injury including seat belt and child restraint requirements, speed limits and the use of helmets. Trauma registry data suggest there are opportunities to further reduce injury in Oregon, including:

1. Promote the use of bicycle helmets among riders ≥16 years;
2. Promote the use of protective headgear among adult all terrain vehicle riders ≥18 years;
3. Screen patients ≥55 years of age for falls, document the falls reported, and refer patients to evidence-based programs to improve strength and

balance, and remove fall hazards in the home;

4. Reduce alcohol consumption, particularly among young adults, by increasing the price of alcohol;
5. Use of the state Prescription Drug Monitoring Program electronic database to inform prescribing decisions;
6. Health expert engagement in state and local transportation planning processes to reduce pedestrian, bike, and motor vehicle traffic injury;
7. Screen all patients for depression and suicidal ideation and refer as needed;
8. Screen all patients for family violence and refer as needed.

INFORMATION

- Injury Prevention and Epidemiology Program: <http://public.health.oregon.gov/PHD/Directory/Pages/program.aspx?pid=43>

RESOURCES

- Oregon Trauma Registry: <http://public.health.oregon.gov/Provider-PartnerResources/EMSTraumaSystems/TraumaSystems/Pages/registry.aspx>
- Prescription Drug Monitoring Program - www.orpdmp.com
- For inquiries about clinical screening and referral to community-based fall prevention, contact lisa.m.sheilds@state.or.us
- American Geriatric Society Clinical Practice Guidelines 2010. Prevention of falls in older persons visit: www.americangeriatrics.org/