

Utah Trauma Update:

Injury Characteristics: Toddlers, Teens, and Elderly

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Utah Department of Health

Introduction

Injuries affect all citizens of Utah, but some populations are prone to different types of injuries and may suffer more severe consequences from injury.¹ In this report, we compare common attributes and consequences from injury for three groups of Utahns. The three groups include: Toddlers (ages 2 to 7 yrs); Teens (ages 14 to 19 yrs.) and Elderly (ages 75 to 80 yrs.). We compare these three groups by cause of injury, severity of injury, the amount of time spent in the hospital as a result of the injury, and the likelihood of death from injury during the patient's hospital stay.

Cause of Injury

The Utah Trauma Registry includes information for 12,934 seriously injured patients in the state of Utah from 2001 through 2007 in the three age groups. There are 4,054 Toddlers, 6,284 Teens and 2,596 Elderly patients.

Among the three groups, Toddlers and the Elderly were most likely to be seriously injured due to a fall (see Figure 1). In the Teen group, patients were much more likely to have suffered an injury due to a car crash. Motorized vehicles are important causes of serious injury in all age groups.

Severity of Injury

Because the severity of injury is difficult to quantify without using a common scale, we compare injury severity for the three groups using the Injury Severity Scale (ISS, see footnote). An ISS score defines a patient's injuries by ranking the severity of the three most prominent injuries for each patient. A score greater than 15 is considered moderate to severe injury.

Figure 1. Top 5 Causes of Injury for Three Age Groups (Toddlers, Teens and Elderly).

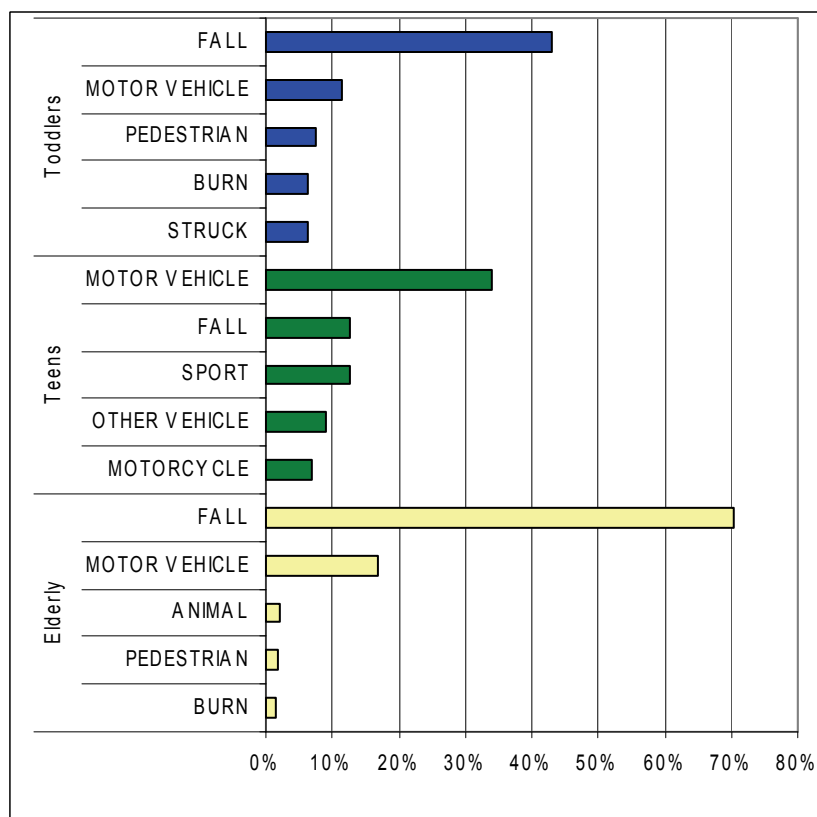
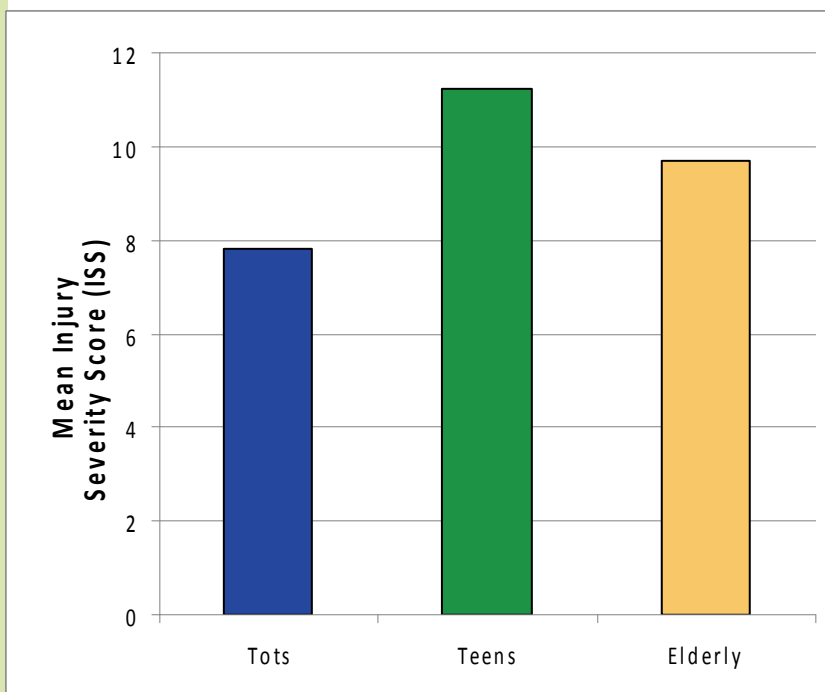


Figure 2. Severity of Injury (ISS) for Three Age Groups



The teen age group was most likely to suffer a severe injury, most likely due to the number of injuries sustained while riding in/on a moving vehicle. The Elderly were more likely to suffer more severe injuries than Toddlers (see Figure 2).

Length of Hospital Stay

When assessing hospital stay, it should be noted that even though Teens suffer the most severe injuries, the Elderly are more likely to experience longer hospital stays (see Figure 3). These extended stays in the hospital among the elderly may be due to the presence of other medical conditions that often complicate their medical care.

Death During Hospital Stay

The data in Figure 4 suggest that the Elderly are much more likely to die during a hospital stay for a severe injury. This finding is, again, somewhat distorted by the fact that the elderly often also suffer from other medical conditions that increase the probability of dying during treatment or recovery from a severe injury. For example, an elderly patient may be more likely than younger patients to develop pneumonia during an extended hospital stay, increasing the probability of death.

Conclusion

Differences exist in the cause, type and severity of injury suffered by Utahns based upon age. When attempting to develop injury prevention programs for Utahns, care should be taken to ensure that programs focus on the causes of injuries specific to an age group. In addition, injury treatment modalities need to be mindful of mechanisms of injury and complicating medical conditions that may directly affect survivability for specific age groups following severe injury.

Figure 3 Length of Hospital Stay for Three Age Groups

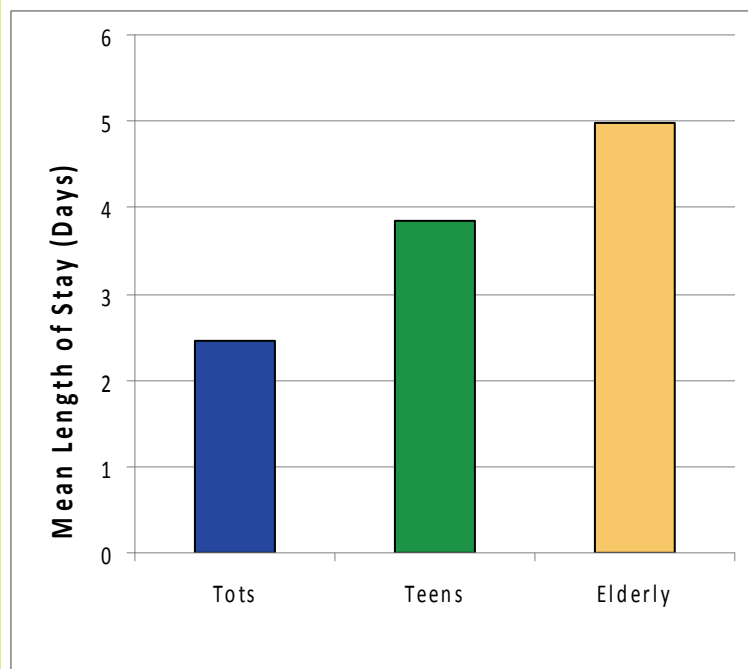
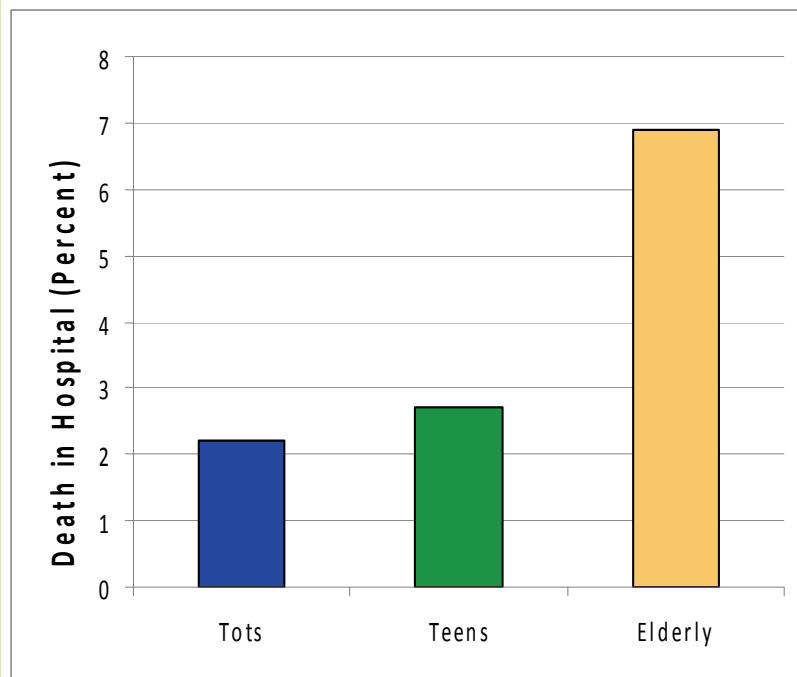


Figure 4 Death During Hospital Stay for Three Age Groups



Footnotes: The Injury Severity Score is a common matrix used to define the seriousness of injuries suffered by patients seeking medical attention.

References:

1. D Fife, J I Barancik and B F Chatterjee. Northeastern Ohio Trauma Study: II. Injury rates by age, sex, and cause. American Journal of Public Health, Vol. 74, Issue 5, 473-478.