Sports and Recreation-related Traumatic Brain Injuries in Utah, 2011

Introduction

In 2011, 21.9% of TBI hospitalizations in Utah were attributed to sports or recreational activities.

Sports/recreation-related TBIs include: Off-highway vehicle/all-terrain vehicle (OHV/ATV) crashes, bicycle crashes (non-traffic), team sports, snow sports, water sports, horse/rodeo, skateboard/inline skates/scooters, and other recreational activities. OHV/ATVs also include snowmobiles, dune buggies, dirt bikes, etc.

Traumatic brain injuries can have a dramatic impact on a person’s ability to lead an active, fulfilling life. TBIs can affect an individual’s ability to work, as well as his or her short- and long-term memory, vision, sleep, mood, and movement.

Causes of TBI

The leading causes of sports/recreation-related TBI hospitalizations and deaths in Utah in 2011 were (Figure 1):

- Recreational activities (23.9%)
- Bicycle crashes (20.4%)
- OHV/ATV (16.4%)

Concussions

Concussions are a type of TBI caused by a bump, blow, or jolt to the head. It’s estimated that 75% of TBIs that occur nationally each year are concussions or other mild TBIs. All concussions are serious.

In 2011, 6,228 Utahns were treated and released from the emergency department (ED) for a concussion. Of these, 41.7% were due to sports/recreation activities. Half (48.3%) of all ED visits for sports/recreation-related concussions were among children ages 10-19. When age is looked at more closely, 25.7% of concussions from sports/recreation activities were among teens ages 15-19 and 22.6% were among children ages 10-14.
Sports/Recreation-related TBIs occur more frequently among the younger population.

In 2011, males had a higher occurrence of sports/recreation-related TBIs for ages 0-35 compared to females (Figure 2). As age increases, the difference between males and females becomes less significant.

The age range and average age of Utahns who sustained a sports/recreation-related TBI in 2011 are listed in Table 1.

Helmet Use

Helmets can and do save lives and prevent injury when worn properly. Of Utahns who suffered a sports/recreation-related TBI in 2011 and for which helmet use was known:

- 89.5% were not wearing a helmet while on a skateboard/inline skates/scooter;
- 66.7% were not wearing a helmet during snow sports; and
- 75.7% were not wearing a helmet while on an OHV/ATV.
Cost

Sports/recreation-related TBI hospitalization charges totaled more than $7 million in 2011. Table 2 lists median hospitalization charges by cause. Hospitalization charges for concussions due to sports/recreation totaled more than $3 million in 2011.

Prevention Tips

• Wear a helmet when:
  o Riding an OHV/ATV, bicycle, skateboard, or scooter;
  o Playing a contact sport such as football, ice hockey, or boxing;
  o Using inline skates or riding a skateboard;
  o Batting and running bases in baseball or softball;
  o Riding a horse; or
  o Skiing or snowboarding.

• Ask your league, school, or district about concussion policies. Utah law requires youth sports organizations to have a concussion policy.

• Teach and practice safe playing techniques. Follow all rules pertaining to your sport.

• Teach athletes it’s not smart to play with a concussion. When an athlete has a concussion, the brain needs time to heal. Don’t let your athlete return to play until a health care professional, experienced in evaluating for concussion, says he or she is symptom-free and it’s OK to return to play.

• Replace damaged equipment promptly, especially helmets and other protective head gear. Some helmets require replacing after any impact, even if there are no visible signs of damage.

• Make sure the surface on your child’s playground is made of shock-absorbing material such as hardwood mulch or sand.

Laws

Team Sports: In 2011, the Utah State Legislature passed a law requiring amateur sports organizations (including schools) to adopt and enforce a concussion and head injury policy and to get written approval of the policy by parents/legal guardians before their child participates in sports. A child who gets a head injury must

<table>
<thead>
<tr>
<th>Cause of TBI</th>
<th>Median Charges</th>
<th>Mean Charges</th>
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<tbody>
<tr>
<td>OHV/ATV</td>
<td>$23,985.00</td>
<td>$52,023.88</td>
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<tr>
<td>Bicycle crashes</td>
<td>$20,332.97</td>
<td>$37,206.32</td>
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<tr>
<td>Horse/Rodeo</td>
<td>$21,697.77</td>
<td>$27,475.49</td>
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<tr>
<td>Snow sports (snowboarding, sledding, ice skating)</td>
<td>$14,270.07</td>
<td>$40,281.34</td>
</tr>
<tr>
<td>Skateboard/rollerblades/scooter</td>
<td>$15,469.61</td>
<td>$18,643.47</td>
</tr>
<tr>
<td>Team sports</td>
<td>$7,489.08</td>
<td>$11,936.49</td>
</tr>
<tr>
<td>Recreational activities (water sports, playground, trampoline, golf cart, jogging, etc.)</td>
<td>$14,040.48</td>
<td>$24,153.53</td>
</tr>
</tbody>
</table>
Sports/Recreation-related TBIS in Utah, 2011

be removed from play and may return only after written clearance from a qualified health care provider. To learn more, visit www.health.utah.gov/vipp/traumaticBrainInjury/sports.html.

**OHV/ATVs**: Utah law requires youth aged 8-15 to take an OHV Safety Education class approved by Utah State Parks and Recreation before operating OHVs/ATVs. It is illegal for any child under age eight to operate an OHV on public land. Drivers 16 years of age and older must have a valid driver’s license to operate. OHVs. Online OHV safety education courses are available at www.stateparks.utah.gov/ohv.

**Resources**
- CDC Concussion in Sports www.cdc.gov/concussion/sports/index.html
- CEUs for health care providers on diagnosing and treating concussions (Utah Medical Home Portal) http://www.medicalhomeportal.org/diagnoses-and-conditions/traumatic-brain-injury/description
- Utah State Parks and Recreation http://stateparks.utah.gov
- Brain Injury Alliance of Utah www.biau.org

**References**
1 Utah Emergency Department Encounter Database, Bureau of Emergency Medical Services, UDOH.

The data provided in this fact sheet were obtained through analysis of a sampled portion of the total TBI cases in Utah via the Utah TBI Database. The total number of TBI hospitalizations in Utah in 2011 was 2,294. The sampled cases numbered 998. The sampled cases represent the total cases, allowing the data reported to be extrapolated to the total cases. TBIs are included in the Utah TBI database when they result in hospitalization or death with one or more of the following: observed or self-reported unconsciousness or decreased level of consciousness; amnesia; skull fracture; changes in motor function, sensory function, reflexes, or speech; or seizures; hemorrhages, bruising, or other trauma to the brain.

_Last updated: January 2014_

If your life has been affected by a traumatic brain injury, the Utah Department of Health wants to hear from you. Share your story with the Utah Health Story Bank at www.health.utah.gov/bhp/sb/.

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