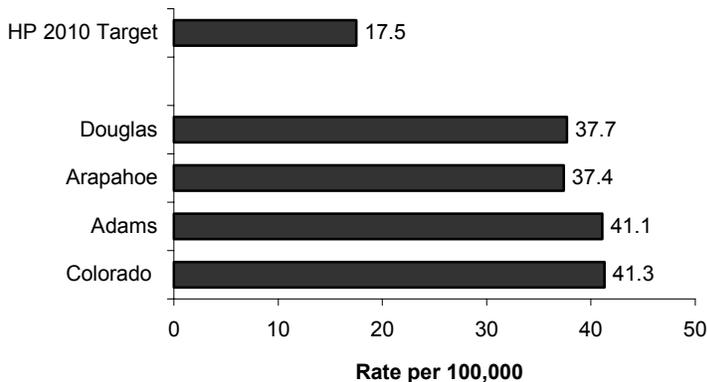


## Unintentional Injury: Addressing the Leading Cause of Death for Coloradoans Ages 1-44

By Jana Smith, Ph.D.

Unintentional injuries are a substantial and preventable public health problem, resulting in significant numbers of hospitalizations and deaths both nationally and here in Colorado. This update describes the injury problem in our three-county area and provides useful tips on incorporating injury prevention activities in your practice. Unintentional injuries are those without purposeful intent, including motor vehicle crashes affecting passengers or pedestrians, bicycle crashes, falls, fires, poisonings, drowning, choking, and occupational or recreational injuries.

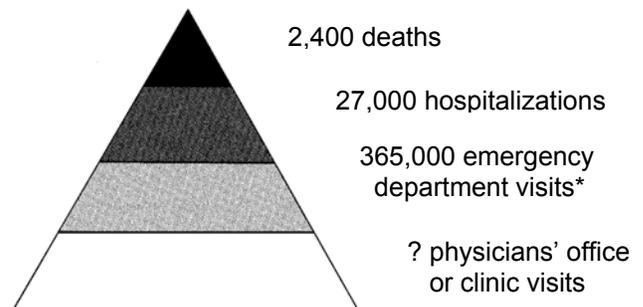
Unintentional injuries affect everyone regardless of age, gender, race or socio-economic status. In Colorado, injuries are the third leading cause of death behind heart disease and cancer. Of the injury deaths in Colorado, approximately 60 percent are from unintentional causes. Unintentional injury is the leading cause of death for people ages 1-44 and results in more years of potential life lost than cancer.<sup>2</sup> However, older adults are disproportionately affected by injury. Nationally, adults age 65 and older account for 13% of the population but 26% of all injury deaths and 30% of all hospitalizations due to injury.<sup>1</sup>



Healthy People 2010 sets a national objective of reducing deaths caused by unintentional injuries to 17.5 deaths per 100,000 population. In 2001, the age-adjusted unintentional injury death rate in Colorado, as well as the rates for the three counties served by the Tri-County Health Department, were well above this target.<sup>3</sup>

Mortality rates, however, are only part of the picture. Hospitalization data is more indicative of the extent of the injury problem than death data alone. As shown at right, more than 27,000 Coloradoans are hospitalized and thousands more are treated annually in emergency departments and physicians' offices. It is estimated that nearly one in ten Coloradoans seek treatment for injuries each year.<sup>2</sup>

### The Injury Pyramid



\*Based on national estimates for emergency department visits



## Leading Causes of Injury Mortality and Morbidity in Colorado

### Motor Vehicle Crashes

**Motor vehicle crashes are the leading cause of death among Colorado children at every age after their first birthday.**<sup>1</sup> More than half of Colorado children injured in a motor vehicle crash and treated at a trauma center (1997-2000) were unrestrained, leaving them at twice the risk of death and injury as children riding restrained.<sup>2</sup>

Motor vehicle traffic crashes account for 45 percent of all unintentional injury deaths in Colorado, killing more than 600 Coloradans each year. Nearly 4,500 Coloradans are hospitalized each year for injuries sustained in a motor vehicle traffic crash, often seriously disabled by traumatic brain and spinal cord injuries.<sup>2</sup> Many of these tragic deaths and serious injuries are preventable.

The age-adjusted annual average hospitalization rate for motor vehicle crashes in Colorado (1998-2000) was 106.0 per 100,000 population. The rate for **Adams County** was 83.0; **Arapahoe County** was 95.8; **Douglas County** was 80.0.<sup>4</sup>

### Motor Vehicle-Related Injury Prevention

Injuries and deaths due to motor vehicle occupant injuries are very preventable.

- When properly used, seatbelts are 45 to 69% effective in preventing fatal injuries.
- When correctly installed, child safety seats reduce the risk of death by up to 71% and reduce the need for hospitalization by 69% for children ages 4 years and younger.
- Booster seats can be protective for children ages 4-8; studies show the percent of children who sustain significant injuries in a crash is 45% lower among children in booster seats compared to children using seatbelts only. Colorado's child restraint law was recently strengthened by requiring 4 and 5 year olds to ride in booster seats. **This new section of the law took effect August 1, 2003.**

**Colorado's new  
Child Restraint Law  
effective August 1, 2003.**

A flyer that explains the law can be downloaded from the Tri-County Health Department website at:  
[www.tchd.org](http://www.tchd.org)  
or call Tri-County Health Department for a copy at 303-846-6243.

The flyer is in both English and Spanish and can be reproduced for your patients.

### Fall-Related Injuries

**Falls are the leading cause of injury death among Colorado adults over age 75, with 60% of the falls occurring in the home.**<sup>2</sup> More than half of all older adults who are injured from a fall cannot return home or live independently after their injuries. Numerous factors contribute to falls in older adults including poor balance, home safety hazards, poor vision and medication interactions.

Overall in Colorado, falls are the leading cause of hospitalization and the second leading cause of deaths due to unintentional injury. Falls are the leading cause of injury-related hospitalization for Colorado children ages 14 and younger.<sup>2</sup>

The falls injury category includes falls on stairs or steps; from ladders; out of buildings; into holes; from one level to another such as playground equipment, cliffs or furniture; falls on level ground (including sports injuries) as a result of slipping, tripping or pushing; and collisions due to pushing or shoving by another person. It does not include falls from bicycles, but does include falls while using scooters, in-line skates, or skateboards, or while participating in such activities as skiing and snowboarding.

The age-adjusted annual average hospitalization rate for falls in Colorado (1998-2000) was 344.3 per 100,000 population. The rate for **Adams County** was 257.9; **Arapahoe County** was 320.0; **Douglas County** was 267.9.<sup>4</sup>

### Fall-Related Injury Prevention

Fall prevention in older adults should address several factors including:

- Home safety checklists to assess the home environment, and home modifications to reduce home hazards. (This is effective in childhood fall prevention as well).
- Physical exercise programs to improve balance and coordination.
- Medication reviews for older adults to assess potential drug interactions or side effects that increase risk of falling.
- Regular vision screening, osteoporosis screening/prevention, and nutrition programs.

### Bicycle Crashes

**Only 19 percent of Coloradoans hospitalized for bicycle-related traumatic brain injury were wearing a helmet at the time of the crash.**<sup>2</sup> Head injuries are the most serious type of injury sustained by bicyclists of all ages. Bicycle helmets have been shown to reduce the risk of bicycle-related head injury, but in Colorado, only 37 percent of riders said they always wore a helmet.

Each year an average of 9 Coloradoans are killed and 517 are hospitalized for injuries sustained in a bicycle crash. Most of the hospitalizations are non-motor vehicle related, i.e., they involve bicyclists who either fell from their bike or struck another bicyclist, pedestrian, or object.

The age-adjusted annual average hospitalization rate for non-motor vehicle-related bicycle crashes in Colorado (1998-2000) was 9.4 per 100,000 population. The rate for **Adams County** was 4.9; **Arapahoe County** was 9.5; **Douglas County** was 9.2.<sup>4</sup>

The age-adjusted annual average hospitalization rate for motor vehicle-related bicycle crashes in Colorado (1998-2000) was 2.7 per 100,000 population. The rate for **Adams County** was 1.4; **Arapahoe County** was 2.2; **Douglas County** was 1.6.<sup>4</sup>

### Bicycle-Related Injury Prevention

Injuries and deaths due to bicycle-related injuries—particularly traumatic brain injury—can be prevented. A bicycle helmet reduces the risk of serious head injury by as much as 85 percent and the risk of traumatic brain injury by as much as 88 percent.<sup>2</sup>

## How to Help Prevent Unintentional Injuries in Your Patients

- Encourage your patients to use seat belts and bike helmets as a health and wellness measure.
- Provide educational materials on child safety seats, and specifically on Colorado's new booster seat law.
- Write a car seat, booster seat or bike helmet "prescription" for patients. Local programs provide free or low-cost child safety seats and bike helmets.
- Refer your patients with children to a child safety seat checkpoint—free events held throughout the metro Denver area—to ensure proper use of car seats, booster seats and seat belts. (Data indicates car seat misuse rates of as high as 85%)
- Assess and discuss with your older patients medical conditions and medications that have potential to affect their driving skills or risk of falling. The American Medical Association has a new publication, *Physicians Guide to Assessing and Counseling Older Adult Drivers*, available at [www.ama-assn.org/go/olderdrivers](http://www.ama-assn.org/go/olderdrivers).
- Encourage older adults to participate in driver retraining available through AARP, older adult exercise programs offered at community recreation centers and senior centers, and home safety assessment and modification programs offered in the community.
- Provide home safety checklists for "child-proofing" or "fall-proofing" to your patients; refer parents with young children and older adults or their care-givers to a community program that provides home safety assessments.

See the attached resource list for any of the above information, materials or services.

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## References

1. *Injury Fact Book 2001-2002*, National Center for Injury Prevention and Control. Atlanta, GA: Centers for Disease Control and Prevention, 2001.
2. *Injury in Colorado*. Denver, CO: Colorado Department of Public Health and Environment, 2002.
3. Colorado Death Statistics, Colorado Department of Public Health and Environment, retrieved July 20, 2003 at [www.cdphe.state.co.us/cohid](http://www.cdphe.state.co.us/cohid).
4. Colorado Trauma Registry, Colorado Department of Public Health and Environment, 2002
5. *Fact Sheet: Motor Vehicle Occupant Injuries for Colorado Children Ages 0-14*, SAFE KIDS Colorado, Colorado Department of Public Health and Environment, 2003.

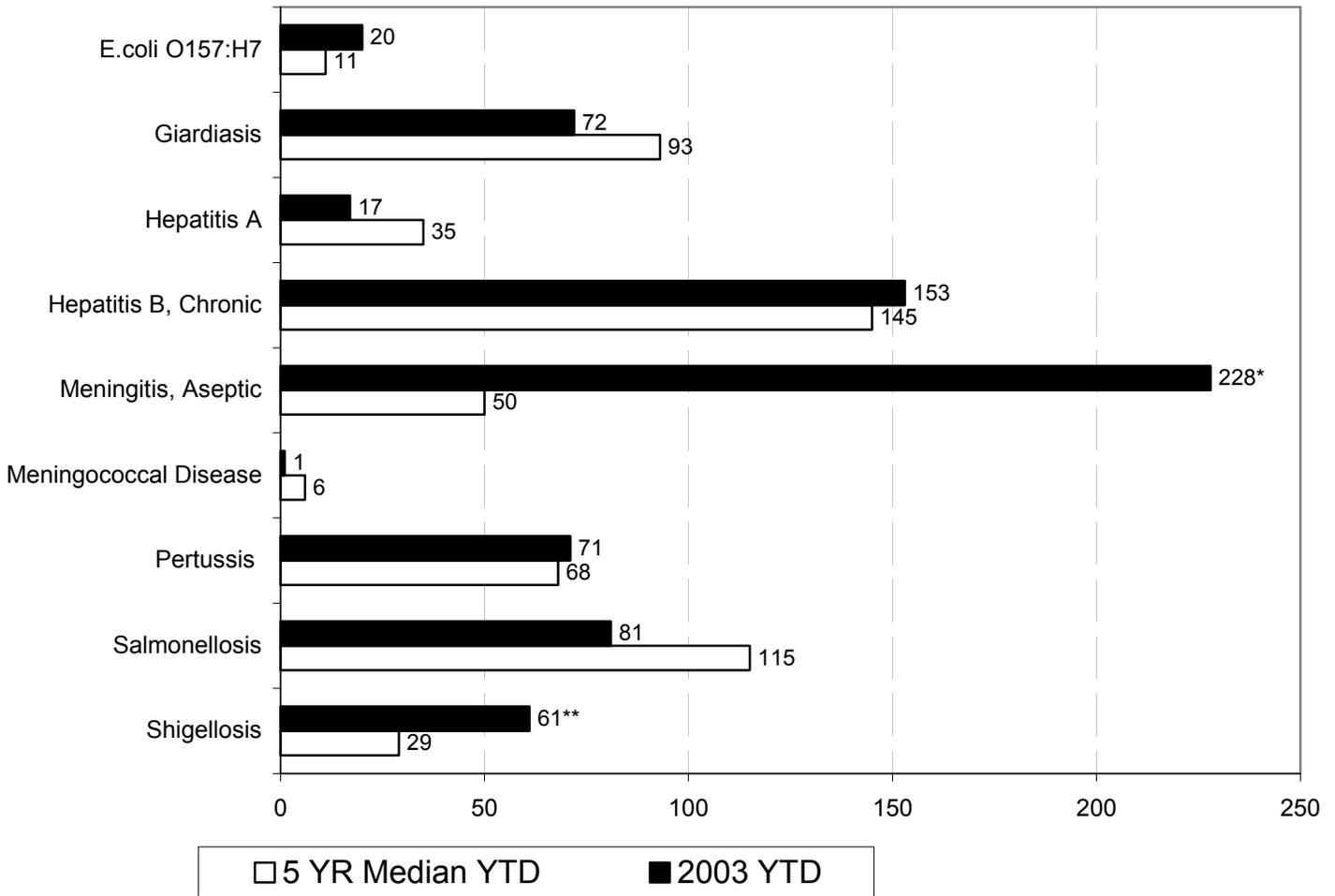
## RESOURCES—Unintentional Injury

Resources for:	Community	State & National
<p><b>Motor Vehicle Safety</b></p> <p><b>Child Safety Seats</b></p> <p><b>Bicycle Safety</b></p> <p><b>Bike Helmets</b></p>	<p><b>Denver Metro SAFE KIDS Coalition, Children’s Hospital</b> Members provide car seat inspections; low-cost or free child safety seats; bike safety programs; low-cost or free bike helmets; fact sheets; educational materials. 303-861-6628 <a href="http://www.tchden.org/PPandV/education/safekids/index.cfm">www.tchden.org/PPandV/education/safekids/index.cfm</a></p> <p><b>Colorado Child Passenger Safety</b> (Colorado State Patrol) Access to local car seat inspection sites &amp; low-cost or free child safety seats; educational materials; fact sheets; web links for help with car seat installation and all aspects of child passenger safety. 303-239-4625 1-800-LUV-TOTS (statewide) <a href="http://www.carseatscolorado.com">www.carseatscolorado.com</a></p> <p><b>Tri-County Health Department</b> County surveillance data; referral to appropriate resources. 303-846-6243 <a href="http://www.tchd.org">www.tchd.org</a></p> <p><b>Keep Me Safe Program</b> at Commerce City Community Health Center. Adams County car seat inspections; low-cost child safety seats. 303-853-3282 <a href="mailto:keepmesafe@acsd.14.k12.co.us">keepmesafe@acsd.14.k12.co.us</a></p> <p><b>AARP Driver Safety Program</b> Driving refresher course for age 50 and older 303-764-5995 (local office) 1-888-227-7669 <a href="http://www.aarp.org">www.aarp.org</a></p> <p><b>Denver Museum of Nature and Science—Hall of Life Education Center</b> Helmet safety &amp; traumatic brain injury education for kids &amp; parents. 303-329-5433</p> <p><b>Denver Osteopathic Foundation</b>—free bike helmet with completion of bike safety course; low-cost child safety seats. 303-996-1140</p>	<p><b>Colorado Department of Public Health &amp; Environment, Injury Prevention Program</b> Includes Injury Epidemiology &amp; SAFE KIDS Colorado. State &amp; county surveillance data; general injury prevention, child safety materials &amp; referral to local resources. 303-692-2609 <a href="http://www.cdphe.state.co.us/pp/injuryprevention">www.cdphe.state.co.us/pp/injuryprevention</a></p> <p><b>National Center for Injury Prevention and Control, Centers for Disease Control</b> National &amp; state surveillance data; research; best practice recommendations; prevention materials &amp; publications <a href="http://www.cdc.gov/ncipc">www.cdc.gov/ncipc</a> SafeUSA: <a href="http://www.cdc.gov/safeusa">www.cdc.gov/safeusa</a></p> <p><b>National SAFE KIDS Campaign</b> Research; product recall information; educational materials. <a href="http://www.safekids.org">www.safekids.org</a></p> <p><b>National Highway Transportation Administration</b> Research; data; community awareness and law enforcement campaigns; educational materials including bilingual. 303-969-6917 (local office) <a href="http://www.nhtsa.dot.gov">www.nhtsa.dot.gov</a></p> <p><b>American Academy of Pediatrics</b> Research; publications; professional education; policy statements &amp; recommendations. <a href="http://www.aap.org">www.aap.org</a></p> <p><b>American Medical Association</b> Research; educational resources; publications including the new “Physicians Guide to Assessing and Counseling Older Adult Drivers”. <a href="http://www.ama-assn.org">www.ama-assn.org</a></p> <p><b>Bicycle Helmet Safety Institute</b> Bike helmet safety standards; consumer guide; statistics and research. <a href="http://www.helmets.org">www.helmets.org</a></p>

## RESOURCES—Unintentional Injury

Resources for:	Community	State & National
<p><b>Home Safety Assessment</b></p> <p><b>Home Modification</b></p> <p><b>Fall Prevention</b></p>	<p><b>Home Care Center for Living Independently</b> Free home safety assessments &amp; home modifications to eliminate safety hazards for seniors (age 60 &amp; older). 303-695-1460 <a href="mailto:jmccormick@horizon-homecare.com">jmccormick@horizon-homecare.com</a></p> <p><b>Keep Me Safe Program</b> Free child home safety assessments; home “baby-proofing”; parent safety education. Metro Denver. 303-853-3282 <a href="mailto:keepmesafe@acsd.14.k12.co.us">keepmesafe@acsd.14.k12.co.us</a></p> <p><b>Consortium for Older Adult Wellness</b> Senior fall risk assessments; structured exercise, balance &amp; mobility training; other fall-prevention programs; train the trainer. 303-987-2752 <a href="mailto:CKATZ12@aol.com">CKATZ12@aol.com</a></p> <p><b>Tri-County Health Department</b> County surveillance data; referral to appropriate resources. 303-846-6243 <a href="http://www.tchd.org">www.tchd.org</a>.</p> <p><b>Denver Regional Council of Governments (DRCOG)</b> Area Agency on Aging. Census data and demographics for all metro counties; referral to resources for local services for seniors including fall-prevention. 303-455-1000 <a href="http://www.drcog.org">www.drcog.org</a></p>	<p><b>Colorado Department of Public Health &amp; Environment, Injury Prevention Program</b> State &amp; county surveillance data; general injury prevention, fall prevention materials &amp; referral to local resources. 303-692-2609 <a href="http://www.cdph.state.co.us/pp/injuryprevention">www.cdph.state.co.us/pp/injuryprevention</a></p> <p><b>National Center for Injury Prevention and Control, Centers for Disease Control</b> National &amp; state surveillance data; research; best practice recommendations; prevention materials &amp; publications <a href="http://www.cdc.gov/ncipc">www.cdc.gov/ncipc</a> SafeUSA: <a href="http://www.cdc.gov/safeusa">www.cdc.gov/safeusa</a></p> <p><b>National SAFE KIDS Campaign</b> Research; product recall info; education materials. <a href="http://www.safekids.org">www.safekids.org</a></p> <p><b>The Fall Prevention Project, Temple University</b> Senior fall-prevention resources: home safety checklists; educational materials; data &amp; publications for health professionals and consumers. <a href="http://www.temple.edu/older_adult">www.temple.edu/older_adult</a></p> <p><b>Home Safety Council</b> Educational materials; family home safety checklist; publications including “The State of Home Safety in America”, a compilation of current research data &amp; prevention recommendations for all unintentional home injuries. <a href="http://www.homesafetycouncil.org">www.homesafetycouncil.org</a></p> <p><b>American Society on Aging</b> Research ; data; professional education and patient education tools. 1-800-537-9728 <a href="http://www.asaging.org">www.asaging.org</a></p>

**Tri-County Health Department  
Selected Diseases by Date of Report  
Adams, Arapahoe, and Douglas Counties  
2003 Year-to-date Through September**



\*The large number of cases of aseptic meningitis is in part due to cases of West Nile virus that have not yet been identified as such and in part due to an enterovirus outbreak of unknown etiology within Colorado and several other states; investigations of both are ongoing.

\*\* The large number of cases of shigellosis is a result of several outbreaks in childcare centers that are still under investigation, as well as an outbreak associated with a restaurant.