



# Colorado

## Special Emphasis Report: Infant and Early Childhood Injury, Released 2013

### Injury is a Leading Cause of Death in Children

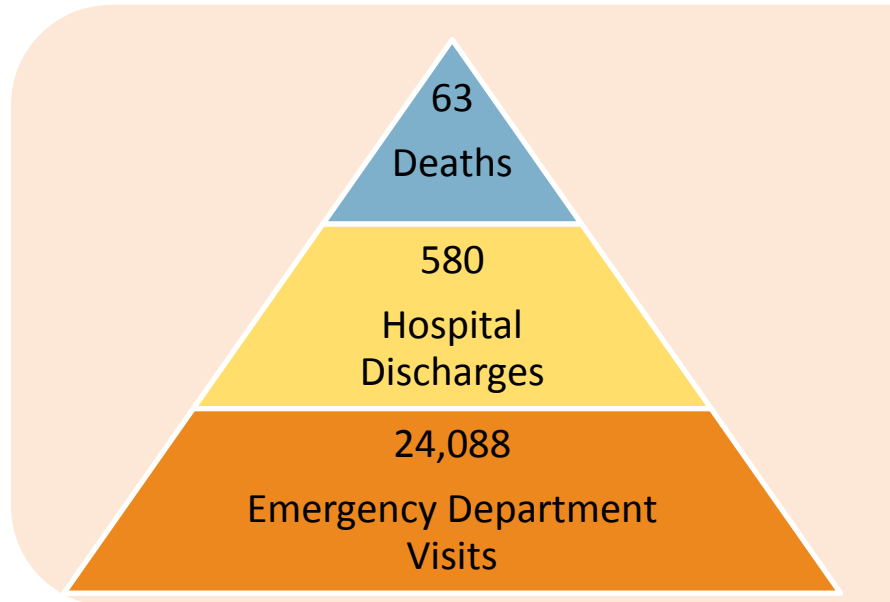
Injuries are a major public health problem, and Colorado's youngest residents have not escaped it. There were 63 children ages 5 years old and younger who died from an injury in 2012. Injury deaths<sup>1</sup> represented 17 percent of all deaths among this age group. Children ages 5 years old and younger accounted for 580 hospital discharges<sup>2</sup> and 24,088 emergency department visits<sup>3</sup> in Colorado during 2012. For every child that died from an injury in 2012, 12 children were hospitalized with an injury, and 437 were treated and released from an emergency department. These numbers do not include children who received treatment in physician offices or at home.

1. ICD-10 codes: V01-Y36, Y85-Y87, Y89, \*U01-\*U03

2. Hospital discharges at non-federal acute care hospitals in Colorado with an ICD-9-CM code for injury in any of the first six discharge diagnoses, excluding inpatient deaths and rehabilitation discharges.

3. Emergency department visits in Colorado with an ICD-9-CM code for injury in any of the first six discharge diagnoses, excluding deaths. It is estimated that the number of visits for any reason is at least 90% complete.

ICD-9-CM codes for injury hospitalizations and emergency department visits are: E800-E869, E880-E929, E950-E959, E960-E969, E970-E978, E979, E980-E989, E990-E999.0, E999.1

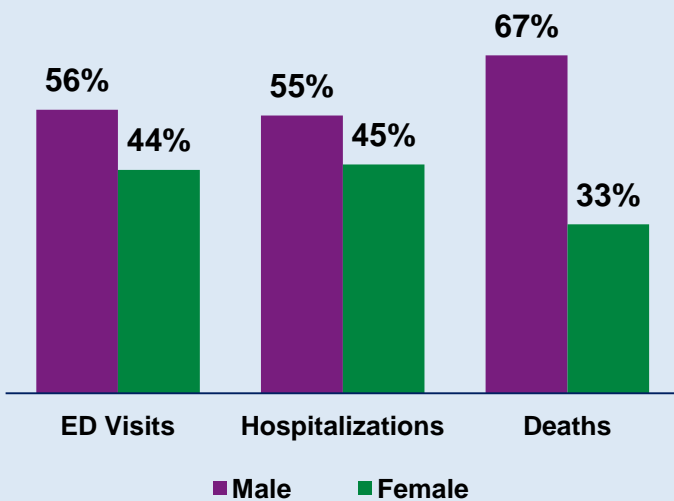


**Figure 1: Annual Injuries among Children Ages 0-5 Years, Colorado, 2012**

### More Boys Sustain Injuries

Boys age 0-5 years old accounted for more than half of the injury-related visits to the emergency department (ED), hospitalizations, and deaths in Colorado (Figure 2). The magnitude of this difference between boys and girls was greatest for deaths. Specifically, 67 percent of the injury-related deaths among children ages 0-5 years old were among boys.

Leading of causes<sup>4</sup> of injury-related ED visits were the same for boys and girls: falls, being struck unintentionally by or against an object or person, and natural and environmental causes, such as excessive heat or causes involving animals. The top three specific causes of injury hospitalizations were the same for boys and girls: falls, poisoning, and natural and environmental causes.



**Figure 2: Percent of Injury Deaths, Hospitalizations and Emergency Department Visits among Children Ages 0-5 Years, by Sex, Colorado, 2012**

This document was produced in conjunction with CDC's Core Violence and Injury Prevention Program under Cooperative Agreement 11-1101. Thanks to Kirk Bol and Mario Rivera for technical assistance, Lindsey Myers, Scott Bates, Mary Martin, and Sarah Hernandez for programmatic assistance.



Colorado Department of Public Health and Environment



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### Preventable Suffocation Causes the Majority of Injury-related Infant Deaths

Suffocation,<sup>4</sup> including accidental strangulation, was the leading type of fatal injury among Colorado infants younger than 1 year old during 2012. Of the 33 injury deaths<sup>1</sup> among infants, 67 percent were due to suffocation or other threats to breathing. Suffocation in bed can be from linens, pillows, or from another body in bed. Other threats to breathing include accidental hanging or strangulation; inhalation and ingestion of food, regurgitated food, or objects; and confined or trapped in a low-oxygen environment, such as a refrigerator. The second leading cause of injury death among infants was homicide and/or fatal abuse (21 percent).

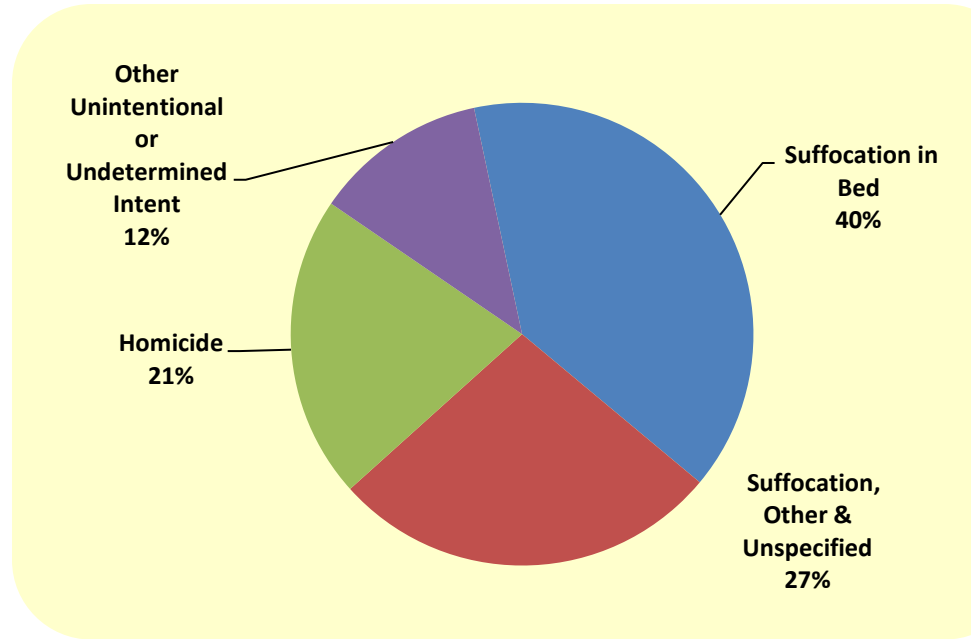


Figure 3: Injury Deaths among Infants Less than 1 Year, Colorado, 2012

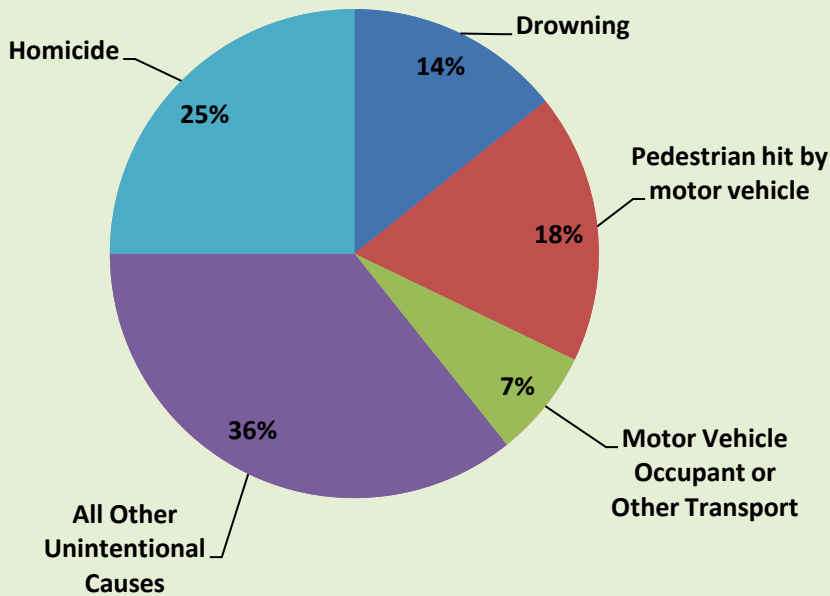


Figure 4: Injury Deaths in Children Ages 1 – 5 Years, Colorado, 2012

### Many Causes of Injury Deaths in Young Children

Homicide<sup>4</sup> or abuse accounted for 25 percent of injury death among children ages 1 to 5 years old in Colorado during 2012, making it the leading cause of injury death among this age group. Another 25 percent of the injury deaths were transportation related, especially pedestrians hit by a vehicle. Fourteen percent of the injury deaths among children ages 1 to 5 years old were drowning or submersion.

4. Details of cause categories are in Appendix A and B of Gabella BA, Proescholdbell SK, Hume B, et. al. State Special Emphasis Report: Instructions for Preparing Infant and Early Childhood Injury Data. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2012.



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## Falls and Poisoning Top Causes of Injury-Related Hospitalizations

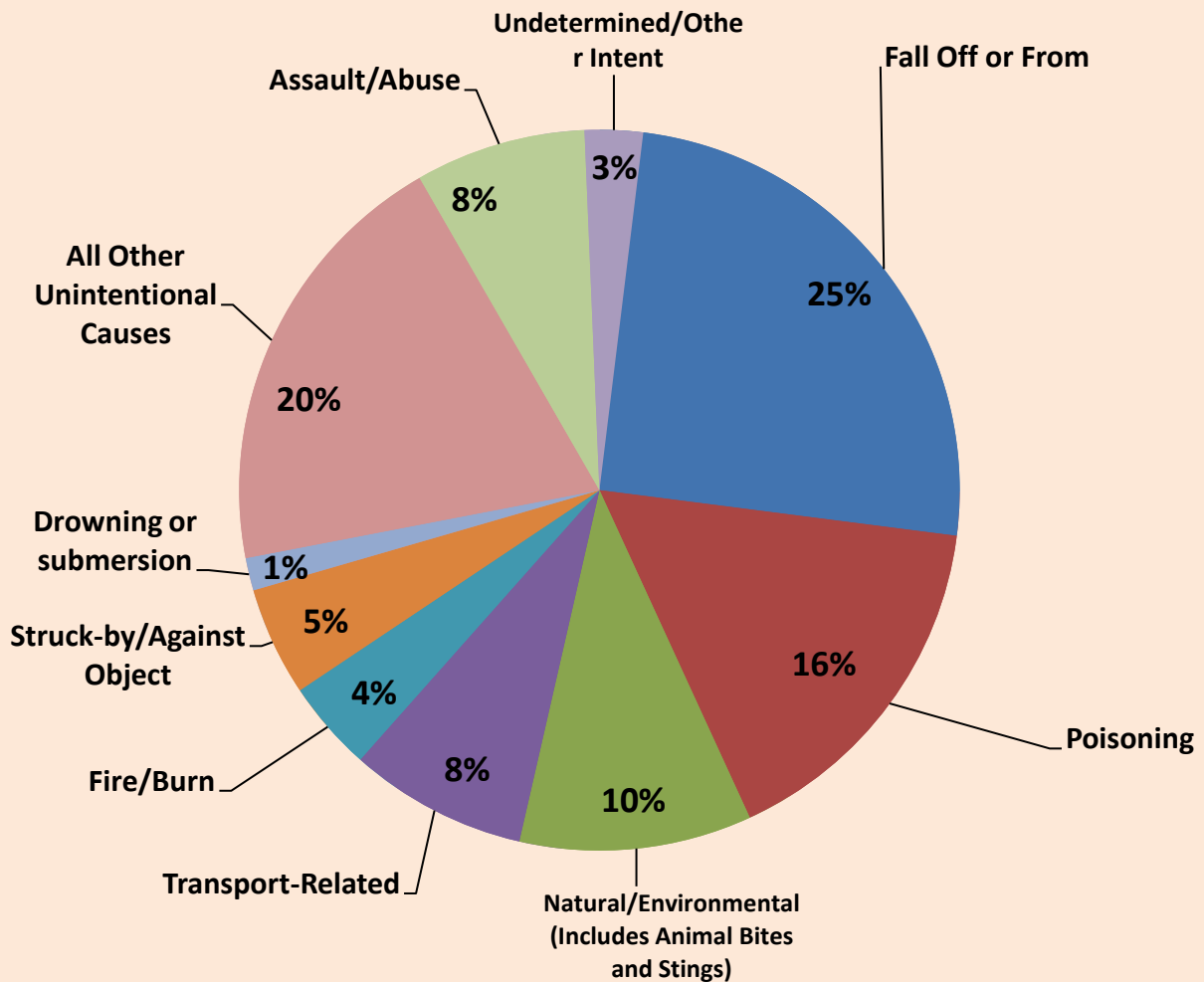


Figure 5: Injury-Related Hospital Discharges among Children Ages 0 – 5 Years, Colorado, 2012

The top three specific causes<sup>4</sup> of injury-related hospitalizations among children ages 5 years and younger were:

- falls (25 percent in 2012, compared to 30 percent in 2011),
- poisoning (16 percent in 2012, compared to 13 percent in 2011), and
- natural and environmental causes (10 percent, no change from 2011), such as excessive heat or causes involving animals and insects.

Transportation-related causes (8 percent) involved motor vehicles and other vehicles, including infant and young children being occupants in a car during a crash, children riding bicycles, and children crossing streets. The type of fall (from furniture, stairs, playground equipment, etc.) was other or unspecified for 46 percent of injury hospitalizations due to falls, so details cannot be provided. There was cause information for 97 percent of the injury-related hospitalizations.

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### Preventing Falls will Reduce Injury-related Emergency Department Visits

The leading of causes<sup>4</sup> of injury-related emergency department visits among children ages 5 years and younger in 2012 were similar to the top causes in 2011: falls (46 percent of the injury visits or 10,997 visits), being struck unintentionally by or against an object or person (14 percent), and natural and environmental causes (8 percent), such as excessive heat or causes involving animals and insects. There was cause information for 98 percent of the 24,089 injury-related emergency departments among children ages 5 years or younger. Unfortunately, the type of fall (from furniture, stairs, playground equipment, etc.) was other or unspecified for 34 percent of visits due to falls, so specific prevention messages and safety strategies cannot be promoted. At least 24 percent of these falls were from furniture, but this percentage could be an undercount.

4. Details of cause categories are in Appendix A and B of Gabella BA, Proescholdbell SK, Hume B, et. al. State Special Emphasis Report: Instructions for Preparing Infant and Early Childhood Injury Data. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2012.

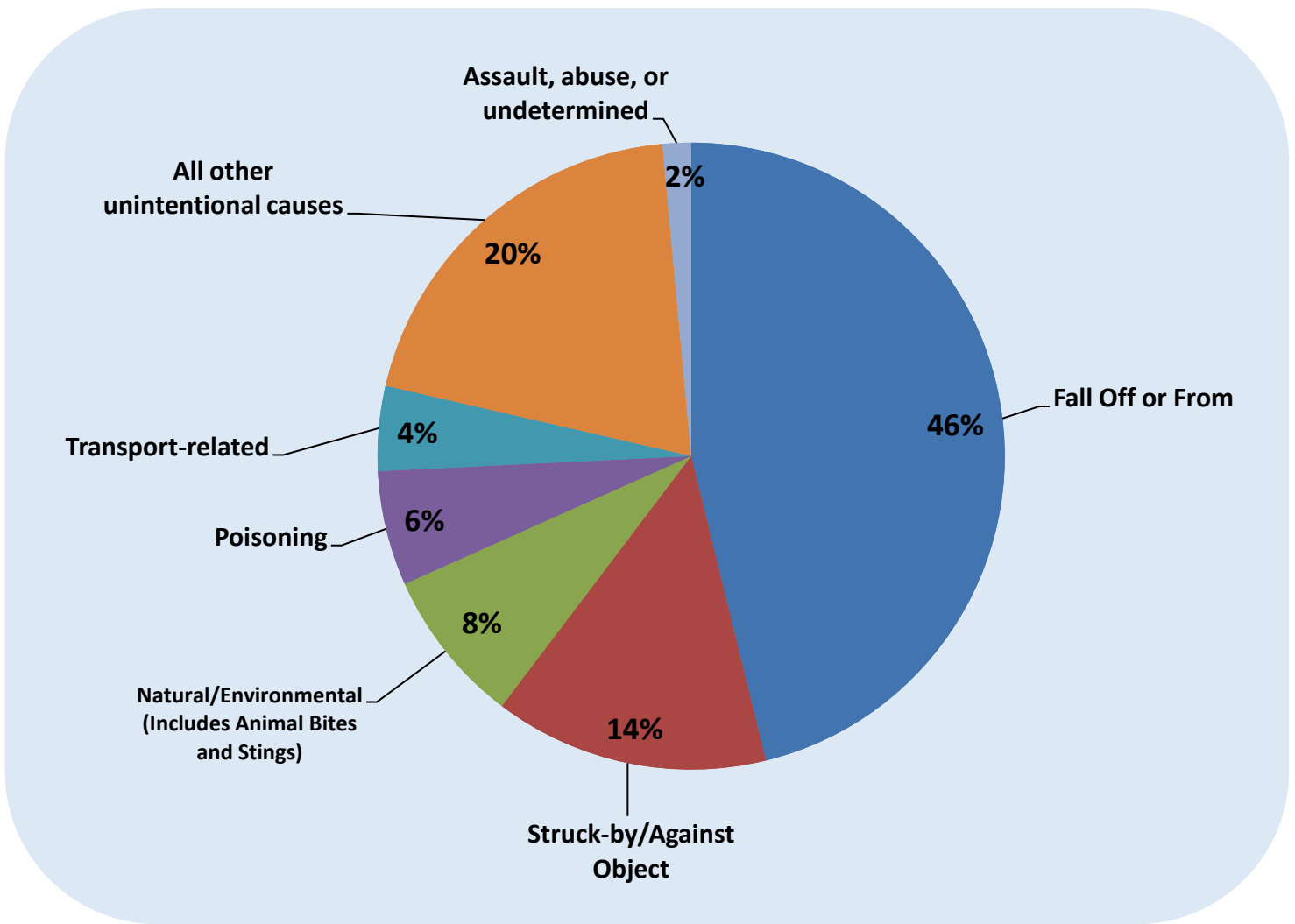


Figure 6: Injury-Related Emergency Department Visits among Children Ages 0 – 5 Years, Colorado, 2012



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**Table 1: Number of Injury-Related Hospital Discharges and Emergency Department (ED) Visits among Children Ages 0 -5 Years, by Age Group, Colorado, 2012**

	Infants less than 1 Year		Children Ages 1-5 Years	
	Hospital Discharges	ED Visits	Hospital Discharges	ED Visits
<b>Unintentional Injuries</b>	<b>136</b>	<b>2,793</b>	<b>415</b>	<b>20,676</b>
Cut/pierce	*	55	5	647
Drowning/submersion	3	7	6	28
Falls ( <i>off/from</i> ):	34	1,631	120	9,366
Furniture	9	696	26	1,964
Steps/stairs	*	187	8	739
With strike against object	3	122	7	1,301
Slipping/tripping/stumbling	*	73	6	1,559
Playground equipment	*	6	21	794
Building	*	*	14	41
Other fall from one level to another	12	377	23	1,222
Other/unspecified	19	559	52	3,121
Fire/Burn	3	126	22	599
Foreign Body	*	6	3	106
Natural and Environmental	10	118	54	1,788
Excessive heat	3	*	31	7
Dog bites	*	24	21	420
Other bites/stings/animal injury	5	86	3	1,343
All other natural/environmental	20	8	79	19
Poisoning	3	135	27	1,275
Struck-by/against object	*	295	3	3,073
Suffocation	*	*	47	7
Transport-related	*	48	20	993
Motor vehicle (MV)-occupant	*	36	5	445
Bicycle/tricycle (MV & non-MV)	*	*	11	249
Pedestrian (MV & non-MV)	*	4	11	60
Other transport	60	7	59	239
All other unintentional causes	30	390	17	3,030
<b>Assault/Abuse</b>	<b>10</b>	<b>27</b>	<b>6</b>	<b>107</b>
<b>Undetermined/Other Intent</b>	<b>17</b>	<b>30</b>	<b>10</b>	<b>185</b>
<b>Total Injury-Related Records (with and without mention of the cause of injury)</b>	<b>158</b>	<b>2,878</b>	<b>422</b>	<b>21,211</b>

\*Indicates fewer than 3 events in this category. An injury event or record can have a sequence of causes, resulting in multiple causes per record.



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### Highlight: Preventing Sudden Unexpected Infant Deaths

Since 2009, Colorado has participated in the Centers for Disease Control and Prevention’s Sudden Unexpected Infant Death Initiative to identify strategies to prevent these deaths, including sleep-related infant deaths. In 2010, a statewide, multi-agency Colorado Safe Sleep Coalition formed to promote safe sleep strategies. When a baby under one year of age dies during sleep, it is called a sleep-related death. Between 2010 and 2012, there were 136 sleep-related infant deaths in Colorado, accounting for 13 percent of all infant deaths. Among the 136 sleep-related deaths, 39 percent were classified as Sudden Infant Death Syndrome (SIDS), 17 percent as asphyxia, and 24 percent as undetermined.



### About infants

Of the 136 Colorado sleep-related infant deaths from 2010-2012:

- 56 percent were male;
- 84 percent were white;
- 34 percent were Hispanic ethnicity; and
- 88 percent lived in urban parts of the state.

### Unsafe Sleep Environments Can be Made Safe

The American Academy of Pediatrics recommends that infants sleep alone on their backs on a firm surface in their cribs. Infants can sleep in the same room as an adult, but without bed-sharing.<sup>5</sup> Of the 136 Colorado sleep-related infant deaths from 2010-2012:

- 47 percent were not properly placed on their back to sleep;
- 63 percent were placed to sleep with soft bedding;
- 39 percent were placed to sleep in an adult bed; and
- 43 percent were sharing the same sleep surface with one or more adults.

Seventy-nine percent of sleep-related infant deaths (n=107) had data on all three factors that make an environment safe or unsafe for sleep: sleep position, sleep place, and soft bedding (such as comforters, blankets, bumpers, pillows). Almost half of these deaths (46 percent) had more than one unsafe factor in their sleep environment, indicated by the overlapping circles in Figure 7.

### About caregivers

Of the 136 primary caregivers of infants who died in their sleep:

- 49 percent were 18-25 years of age;
- 64 percent had public insurance (e.g. Medicaid);
- 41 percent smoked either before or after birth of the baby;
- 74 percent received regular prenatal care; and
- 62 percent breastfed their babies.

5. Task Force on Sudden Infant Death Syndrome. SIDS and other sleep-related infant deaths: expansion of recommendations for a safe infant sleeping environment. *Pediatrics*. 2011;128:1030-1039.

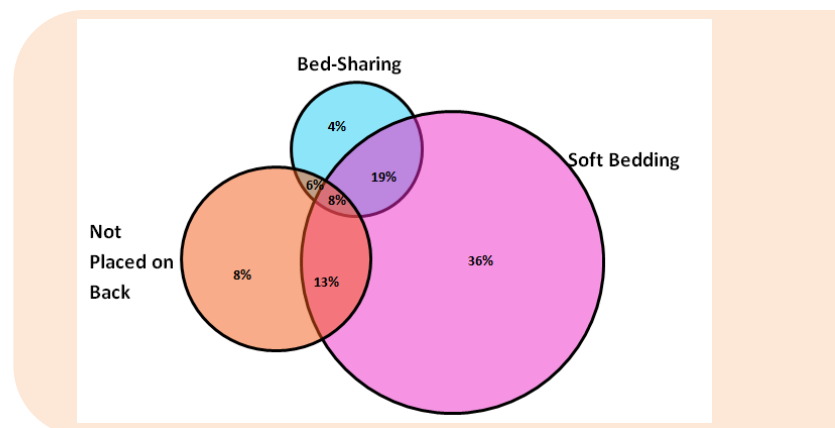


Figure 7: Factors Contributing to Sleep-Related Infant Deaths, 2010-2012 (N=107)

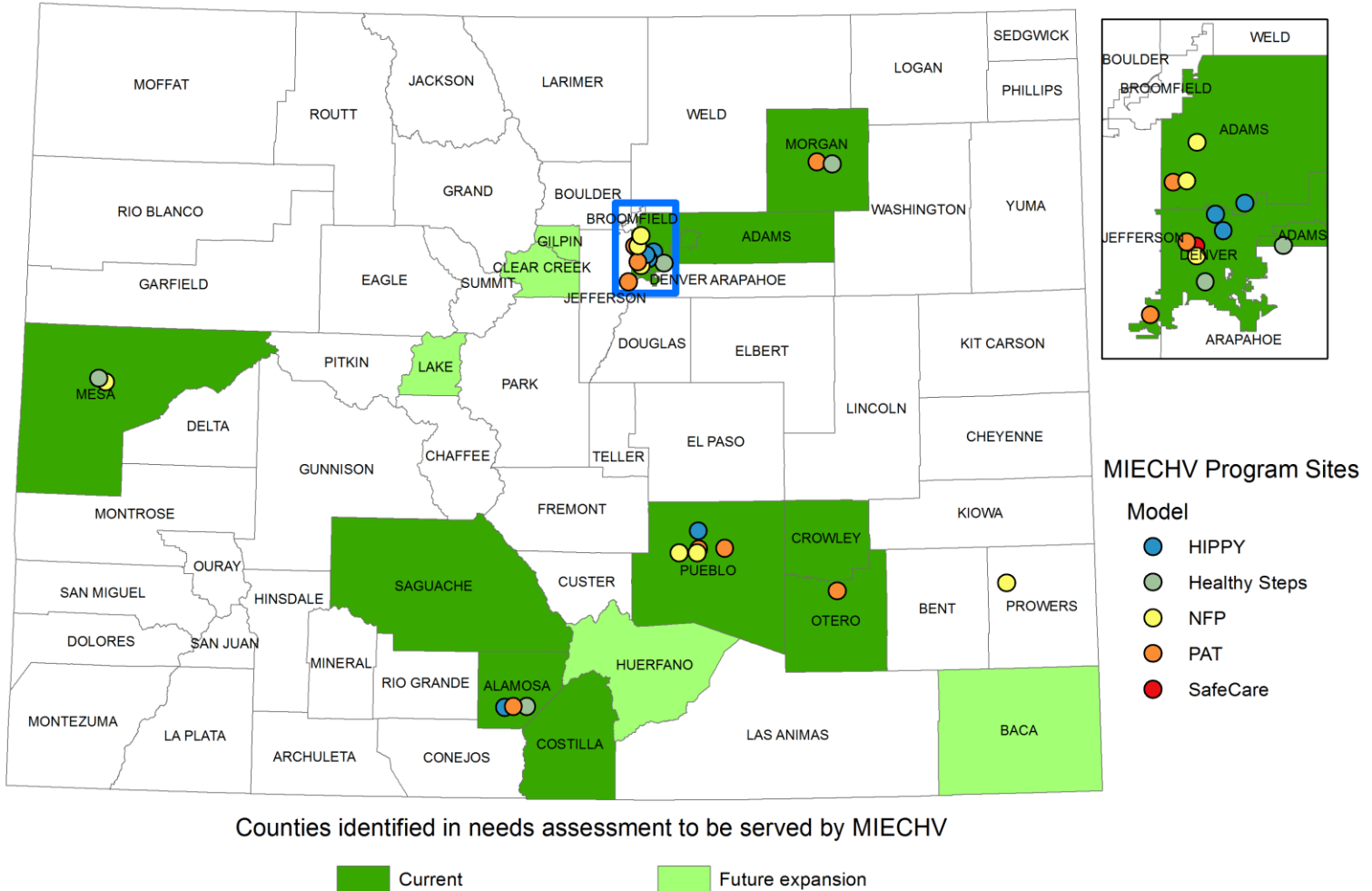


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## Highlight: Colorado Maternal, Infant and Early Childhood Home Visiting (MIECHV) Programs

### Colorado MIECHV Funded Home Visitation Programs 2013



Created by Epidemiology Planning and Evaluation Branch, Colorado Department of Public Health and Environment, October, 2013

MIECHV program sites on the map indicate the locations of the contracting agency. A few agencies serve families in multiple counties.

### MIECHV model programs in Colorado serve families with children of ages 5 years or younger in various counties.

**HIPPY** or Home Instruction for Parents of Preschool Youngster serves children ages 3 to 5 years.

**Healthy Steps** for Young Children serves children ages birth to age 5 years.

**NFP** or Nurse Family Partnership serves children ages birth to 2 years.

**PAT** or Parents as Teachers serves children ages birth to age 5 years.

**SafeCare** Augmented serves children as birth to 5 years.



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### Colorado Child Injury Prevention

The Division of Family and Community Support at the Colorado Department of Human Services uses funds from the federal Community-Based Grants for the Prevention of Child Abuse and Neglect and from the State via the Divorce Docket Fee to prevent child maltreatment via two programs managed by Scott Bates.

- **The Colorado Children's Trust Fund** funds 17 grantees in local communities by serving approximately 700 children and 450 parents each year with research-proven curricula.
- **The Family Resource Centers** program funds 24 centers to conduct primary and secondary prevention of child maltreatment by serving and referring 3600 individuals each year based on each family's strengths and resources.

**The Colorado Child Fatality Prevention System** identifies preventable childhood deaths by all causes and promotes best practice strategies to reduce the incidence of child morbidity and mortality in Colorado. **The Injury, Suicide and Violence Prevention Branch at the Colorado Department of Public Health and Environment** runs the child fatality prevention system. The program manager is Colleen Kapsimalis.



### Colorado Home Visitation Programs

The Nurse Home Visitor Program is funded by State Master Tobacco Settlement dollars to support 21 Nurse Family Partnership sites statewide. These sites provide comprehensive evidence-based home visiting services to improve outcomes for families. In 13 years, the Nurse Home Visitor Program has served 16,682 first-time mothers.

The Maternal, Infant and Early Childhood Home Visiting (MIECHV) program funds expansion of Nurse Home Visitor, and other evidence-based home visitation programs. MIECHV funds are intended to improve coordination of services and strengthen activities carried out under the federal Title V Maternal and Child Health Program, and to ensure that health is a fundamental element of all early childhood systems in Colorado.

The program director is Mary Martin. (maryw.martin@state.co.us)

### Evidence-based Programs in Colorado (locations on previous page)

- Nurse Family Partnership, serving children ages birth to 2 years
- Parents as Teachers (PAT), serving children up to age 5 years
- Home Instruction for Parents of Preschool Youngster (HIPPY), serving children ages 3 to 5 years
- Healthy Steps for Young Children, serving children up to age 5 years
- SafeCare Augmented, serving birth to 5 years

### Benchmark Data on Clients Related to Injury Outcomes

- Child visits to the emergency department
- Child injuries requiring medical treatment
- Reported suspected maltreatment for children in the program
- 98 percent of caregivers enrolled in MIECHV received information or training on prevention of child injuries (such as safe sleep, shaken baby syndrome, traumatic brain injury) during federal fiscal year 2011-2012.

Data sources: Death certificates from the Health Statistics Section of CDPHE and hospital discharge and emergency department data from the Colorado Hospital Association. All injuries are considered unintentional unless specified otherwise. Reference to any commercial entity or product or service on this page should not be construed as an endorsement by the Government of the company or its products or services.

**Colorado Department of Public Health and Environment (CDPHE)  
Injury, Suicide, and Violence Prevention Branch**

<http://www.colorado.gov/cdphe> or contact Lindsey Myers at 303-692-2589