



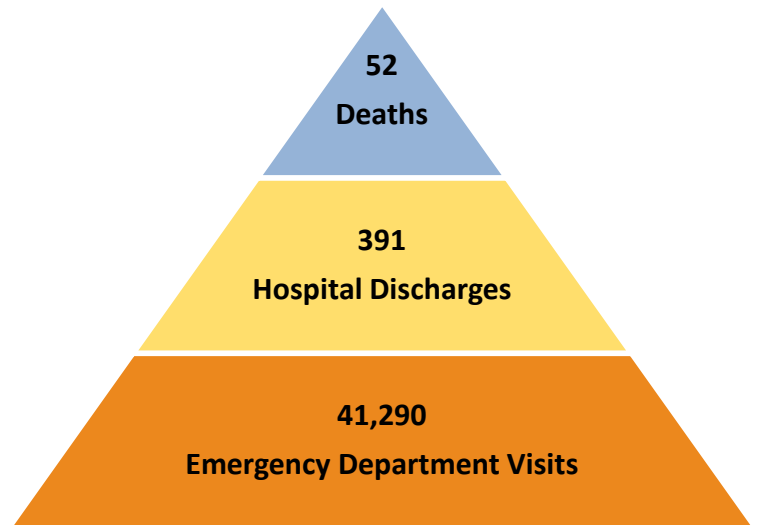
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Special Emphasis Report: Infant and Early Childhood Injury, 2013

Injury is a Leading Cause of Death in Children

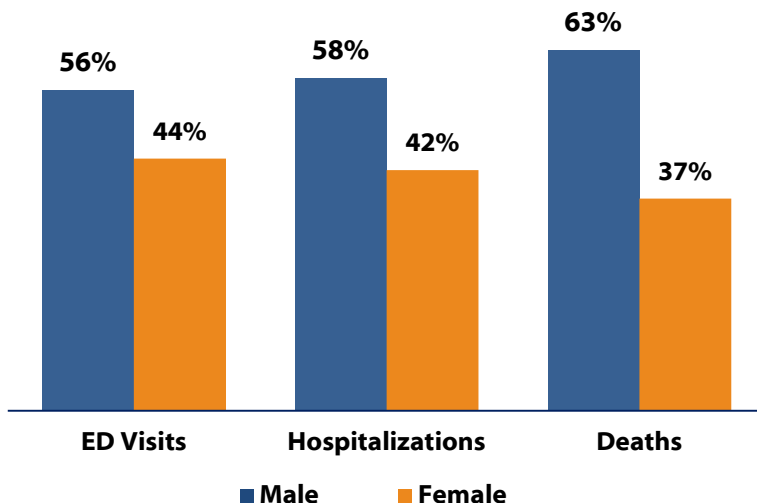
- In 2013, 52 Kentucky children ages birth to 5 years lost their lives as the result of an unintentional or intentional injury.
- This represents an age-specific mortality rate of 1.56 per 10,000 population [95% confidence interval (1.18, 2.06)].
- Injuries were the underlying cause of death in 27 of the 70 total deaths of Kentucky children ages 1 to 5 years in 2013 (39% of all deaths in that age group).
- Injuries were the underlying cause of death in 25 of the 357 total deaths of Kentucky infants in 2013 (7% of all deaths in that age group).
- 46 (88%) decedents age birth to 5 years were white and 6 (12%) were black or other races (categories were combined to protect confidentiality by preventing disclosure of small counts).
- The numbers of hospital discharges and emergency department visits in Figure 1 do not include children who received treatment in physician offices, at home, or at school.

Figure 1: Annual Injuries among Children Ages 0-5 Years, KENTUCKY, 2013



Data sources: Kentucky Death Certificates Files [2013]; Kentucky Inpatient Hospitalization Claims and Outpatient Services Claims Files [2013]. Note: the 2013 files were provisional at the time of this report.

Figure 2: Percent of Injury Deaths, Hospitalizations and Emergency Department Visits among Children Ages 0-5 Years, by Gender, KENTUCKY, 2013



Data sources: Kentucky Death Certificates Files [2013]; Kentucky Inpatient Hospitalization Claims and Outpatient Services Claims Files [2013]. Note: the 2013 files were provisional at the time of this report.

Childhood Injury by Gender

- Male children ages birth to 5 years were more likely than female children to experience an injury that resulted in an emergency department visit, hospitalization, or death.



This document was produced in conjunction with CDC's Core Violence and Injury Prevention Program under Cooperative Agreement 11-1101.



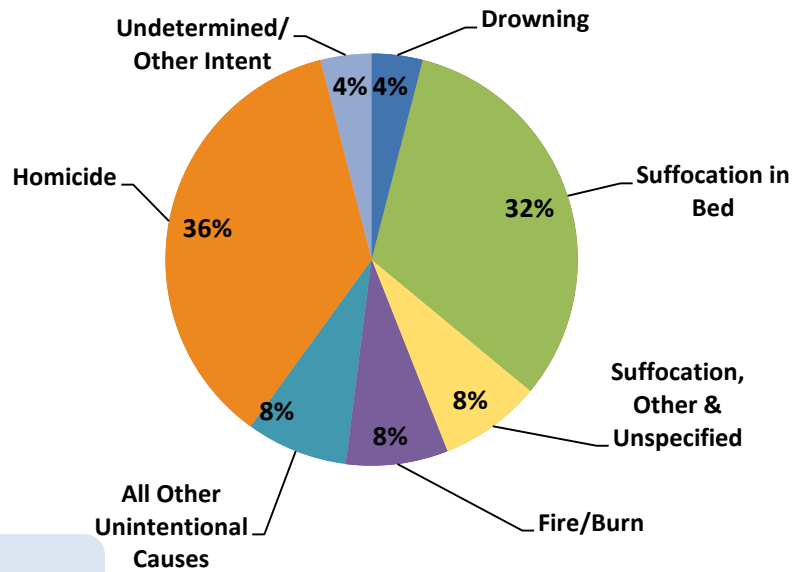
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Injury Deaths in Infants

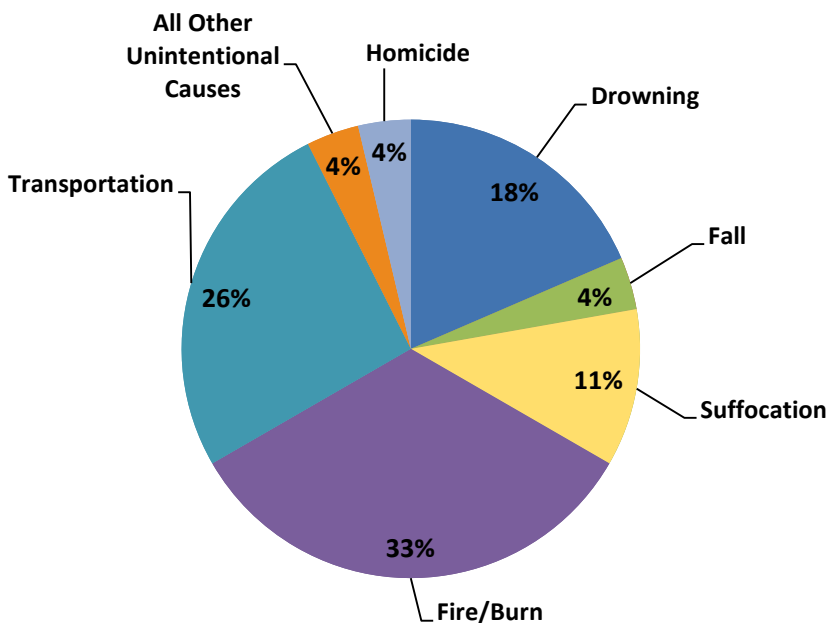
- 7% (25 out of 357) of all deaths of Kentucky infants in 2013 were due to injuries.
- 40% of infant injury deaths were caused by suffocation.
- Eight out of ten infant suffocation deaths (80%) reportedly occurred in bed.
- 62.5% of infant decedents were residents of urban counties, and 37.5% were residents of rural or semi-rural counties.
- 36% of injury-related deaths to infants in 2013 were homicides, an increase from 14% in 2012 and 9% in 2011.

Figure 3: Injury Deaths among Infants Less than 1 Year, KENTUCKY, 2013 (N=25)



Data source: Kentucky Death Certificates Files [2013].
Note: the 2013 file was provisional at the time of this report.

Figure 4: Injury Deaths in Children Ages 1 – 5 Years, KENTUCKY, 2013 (N=27)



Data source: Kentucky Death Certificates Files [2013].
Note: the 2013 file was provisional at the time of this report.

Injury Deaths in Young Children

- 39% (27 out of 70) of all deaths of Kentucky children ages 1 to 5 in 2013 were due to injuries.
- Fire/burns accounted for 33% of injury deaths among children ages 1 to 5 years in 2013. Other leading causes were transportation (26%), and drowning (18%).
- In 6 of the 7 transportation fatalities the underlying cause of death indicated a motor vehicle traffic collision. However in 5 of those cases the decedent's role (vehicle occupant, pedestrian, bicyclist) was not specified.
- 31% of decedents ages 1-5 were residents of urban counties, and 69% were residents of rural or semi-rural counties.

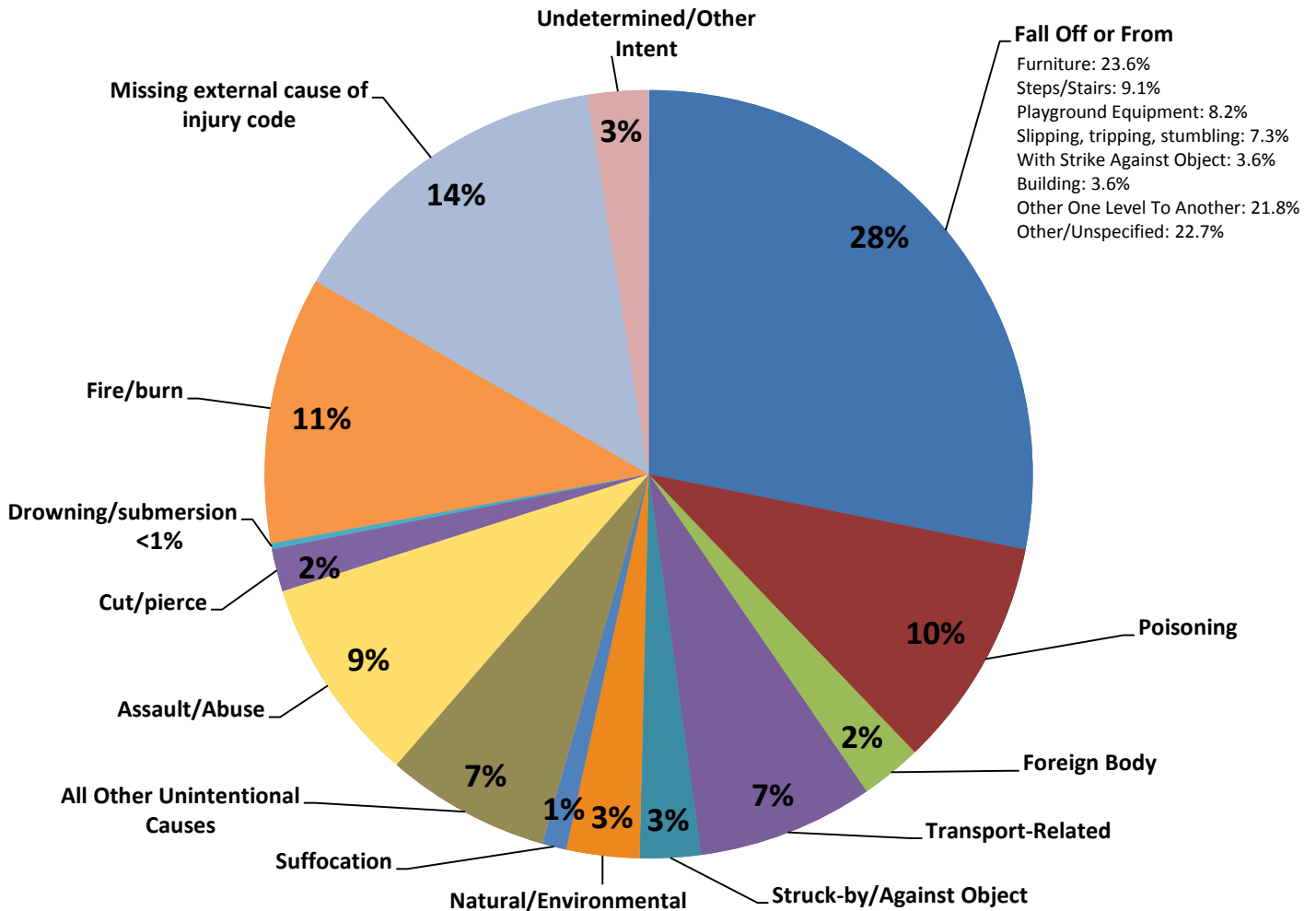


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Injury-Related Hospitalizations

Figure 5: Injury-Related Hospital Discharges among Children Ages 0 – 5 Years, KENTUCKY, 2013 (N=391)



Data source: Kentucky Inpatient Hospitalization Claims Files [2013]. Note: the 2013 file was provisional at the time of this report.

- In 2013, there were 391 injury-related hospitalizations of Kentucky children ages birth to 5 years from hospitals in Kentucky. Age-specific hospitalization rate was 11.7 per 10,000 population [95% confidence interval (10.6, 13.0)].
- About 28% of injury-related inpatient hospitalizations among children ages birth to 5 years resulted from a fall. Furniture, stairs and playground equipment were the most commonly mentioned circumstances of falls.
- Other leading causes of injury-related hospitalization were fire/burn (11%), poisoning (10%), assault/abuse (9%) and transportation (7%).
- Hospitals billed payors \$10.3 million in 2013 for treatment of injured children ages birth to 5 years (Medicaid sources \$7.3 million; commercial payors \$2.3 million; other payors \$0.7 million).
- 61% of injury-related inpatient hospitalizations among children ages birth to 5 years occurred in urban counties; 15% in semi-rural counties; and 24% in rural counties.

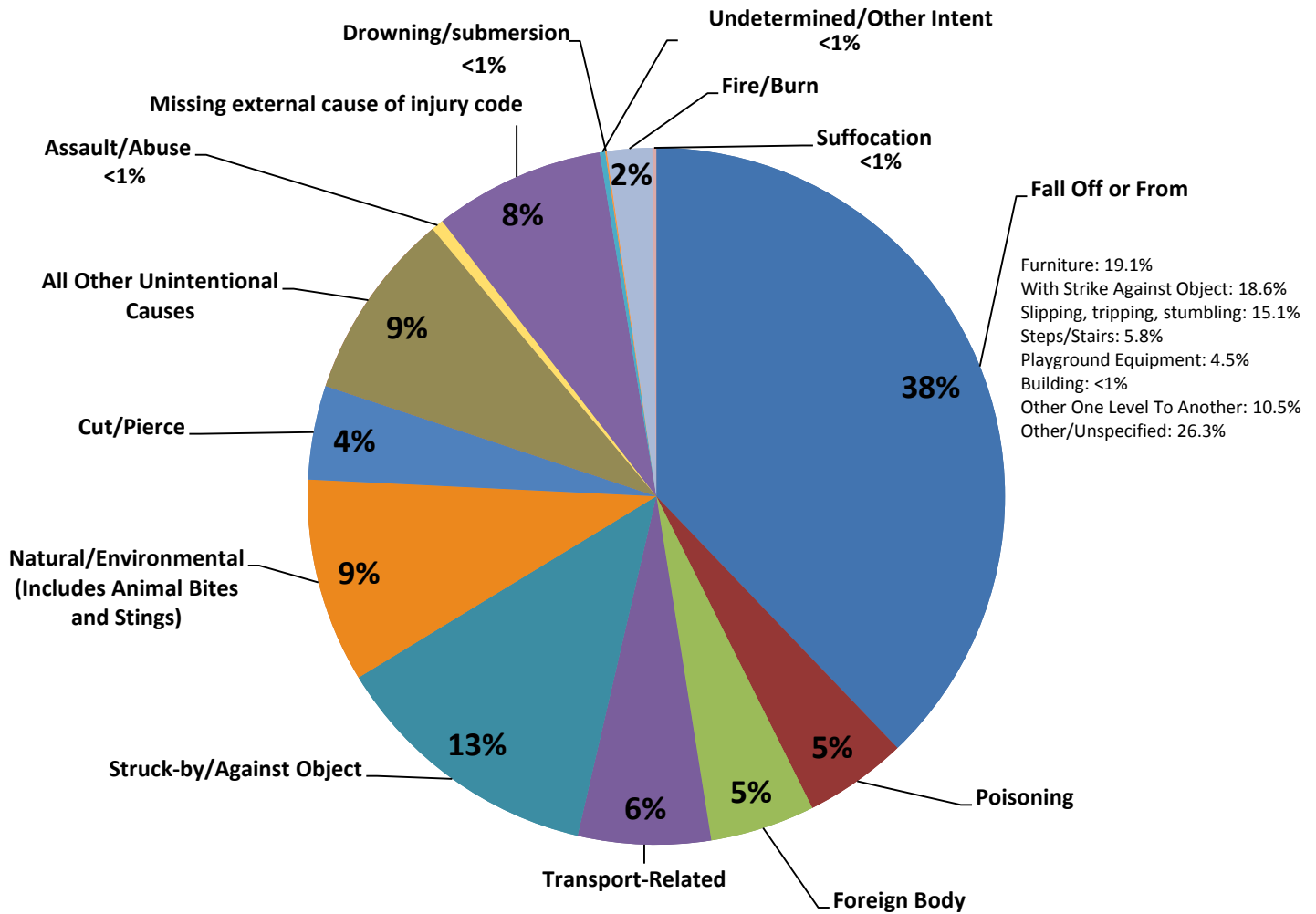


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Injury-Related Emergency Department Visits

Figure 6: Injury-Related Emergency Department Visits among Children Ages 0 – 5 Years, KENTUCKY, 2013 (N=41,290)



Data source: Kentucky Outpatient Service Claims Files [2013]. Note: the 2013 file was provisional at the time of this report.

- In 2013, there were 41,290 injury-related emergency department (ED) visits of Kentucky children ages birth to 5 years to facilities in KY. This is an age-specific rate of 1,238 per 10,000 population [95% confidence interval (1,227, 1,249)].
- Nearly four out of every ten injury-related ED visits among children ages birth to 5 years resulted from a fall. Falls from furniture (19.1%) were the leading cause of all fall-related ED visits.
- 48% of the poisonings in this age group (birth to 5 years) were “secondhand poisoning due to tobacco smoke” (see discussion at bottom of page 8).
- Assault or abuse was noted in less than 1% of injury-related ED visits involving children ages birth to 5 years. *However, based on research featured in national publications, there is evidence to suggest that child abuse and maltreatment may be underrepresented by emergency department billing databases; see “Data sources, definitions and limitations,” page 9.*
- Emergency departments billed payors \$45.4 million in 2013 for treatment of injured children ages birth to 5 years (Medicaid sources \$28.7 million; commercial payors \$12.6 million; other payors \$4.1 million).
- 49% of injury-related ED visits among children ages birth to 5 years occurred in urban counties; 21% in semi-rural counties; and 30% in rural counties.



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Table 1: Injury-Related Hospital Discharges and Emergency Department (ED) Visits among Children Ages 0 -5 Years, by Age Group, Kentucky, 2013

Data sources: Kentucky Inpatient Hospitalization Claims and Outpatient Services Claims Files [2013]. Note: the 2013 files were provisional at the time of this report.

	Infants less than 1 Year		Children Ages 1-5 Years	
	Hospital Discharges	ED Visits	Hospital Discharges	ED Visits
Unintentional Injuries	71	3,844	221	33,835
Cut/pierce	0	73	7	1,726
Drowning/submersion	0	*	*	27
Falls (off/from):	36	1,807	74	13,819
Furniture	14	802	12	2,176
Steps/stairs	*	99	8	810
With strike against object	*	178	*	2,734
Slipping/tripping/stumbling	0	95	8	2,268
Playground equipment	0	5	9	693
Building	0	0	*	11
Other fall from one level to another	11	334	13	1,307
Other/unspecified	7	294	18	3,820
Fire/Burn	7	97	37	766
Foreign Body	*	150	6	1,859
Natural and Environmental	*	316	10	3,597
Excessive heat	0	*	0	7
Dog bites	0	29	*	604
Other bites/stings/animal injury	0	273	8	2,975
All other natural/environmental	*	11	0	11
Poisoning ¹	6	334	32	1,636
Struck-by/against object	*	383	8	4,846
Suffocation	*	31	*	44
Transport-related	*	346	25	2,191
Motor vehicle (MV)-occupant	*	337	16	1,420
Bicycle/tricycle (MV & non-MV)	0	0	*	451
Pedestrian (MV & non-MV)	*	0	*	63
Other transport	0	9	*	257
All other unintentional causes ²	9	304	18	3,324
Assault/Abuse	21	27	13	208
Undetermined/Other Intent	5	16	5	89
Unknown	24	336	31	2,935
Total Injury-Related Cases	121	4,223	270	37,067

1 Includes accidental poisoning by secondhand smoke; see discussion of "Emergency department poisoning visits" on page 8

2 Includes unintentional injuries by overexertion, machinery, fireworks, electric current and several other mechanisms.

* At least one but less than five



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KENTUCKY Child Injury Prevention Activities

• Prevention

- Anticipatory guidance at well child care
- Home safety checklists (HANDS, Healthy Homes, etc.)
- Parent Education (e.g. Head Start, Child Care and hospital-based abusive head trauma prevention)
- Community events (car seat checkups, etc.)
- Professional trainings for child care, health care providers

• Surveillance

- Child fatality review system
- Vital statistics, Hospital Discharge data, ED Data
- Sudden unexpected infant death (SUID) study with State Medical Examiner's Office
- State Police, Transportation, Fire Marshall data
- Received CDC funding to create a SUID Case Registry

• Partnerships

- Local health departments
- Safe Kids, Injury Free Coalition for Kids, etc.
- Pediatric Forensic Medicine
- Child Care Health Consultants & Child Care Licensing
- State Fire Marshall, state/local fire, law enforcement and EMS
- Organizations focusing on child abuse prevention
- Partnered with the Kentucky Department for Public Health's Preparedness Branch to enhance injury prevention for infants (e.g. safe sleep) in disaster and shelter planning
- Partnered with Kentucky Refugee Ministries to enhance child passenger safety efforts for their newly arrived refugee families (from West Africa, Nepal, etc.)
- Partnered with Greenhouse17 (formerly the Bluegrass Domestic Violence Program) to enhance child passenger safety knowledge of their staff and the families they serve

• Accomplishments and Successes

- Health Access Nurturing Development Services (HANDS) home visiting program in all 120 KY counties
- Increased sustainability of rural nationally-certified Child Passenger Safety workforce
- Injury prevention legislation (primary seat belt law, enhanced booster seat law, Closing CPS 15-passenger van law loophole, mandatory abusive head trauma training)
- Kentucky Injury Prevention and Research Center (KIPRC), local health departments and rural fire departments collaborated to accomplish a major expansion of a FEMA fire prevention project to involve several counties in the installation of smoke alarms for families





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Health Access Nurturing Development Services (HANDS)

Health Access Nurturing Development Services (HANDS) is Kentucky's evidence-based statewide home visitation program for overburdened parents. The program was begun in 1998 and is offered in all of Kentucky's 120 counties. Historically the program offered services to first-time parents only, but through federal Maternal, Infant, and Early Childhood Home Visiting (MIECHV) funding and the addition of state general funds, HANDS now serves parents with existing children in addition to first-time parents. Administered by the Department for Public Health through local health departments, HANDS serves families from the prenatal period until the child turns two. The goals of the program are positive pregnancy outcomes, optimal child growth and development, healthy/safe homes and family self-sufficiency. Evaluations have shown program effectiveness for many desired outcomes including reductions in infant mortality, prematurity, low birth weight and substantiated reports of child maltreatment. With the addition of MIECHV grant funds, the program has enhanced services to include any qualifying family (not just first time parents), provide in-home therapy for perinatal depression for participants, and build systems of care in high risk communities. Injury prevention benchmarks include information/training on prevention of child injuries, emergency department utilization (by parent and child), referrals to child protective services, and measures of substantiated child maltreatment. HANDS programs across the Commonwealth serve an average of over 10,000 families per year.

Kentucky Strengthening Families (KYSF) Activities

Kentucky Strengthening Families (KYSF) represents a multidisciplinary partnership of over 20 national, state and local, and public and private organizations dedicated to embedding six research-based Protective Factors into services and supports for children and their families: 1) Parental Resilience; 2) Social Connections; 3) Knowledge of Child Development; 4) Concrete Supports in Times of Need; 5) Social and Emotional Competence of Children; and 6) Nurturing and Attachment. KYSF is using a nationally recognized strategy—Strengthening Families: A Protective Factors Framework – which is coordinated nationally by the Center for the Study of Social Policy. Supporting families is a key strategy for preventing child abuse and neglect. In Kentucky Strengthening Families, the Leadership Team has a shared commitment to: 1) Promoting strong families and healthy development for families prenatally through age five; 2) Partnering with all families and celebrating differences; 3) Using protective factors as a strengths-based philosophy to buffer for toxic stress; 4) Building knowledge and skills for individual and system change; and 5) Creating safe, stable and nurturing environments for people to have responsive and caring relationships. KYSF is funded by the Governor's Office for Early Childhood (GOEC) through the Race to the Top/Early Learning Challenge Grant Program and the Kentucky Department for Public Health through the Health Resources and Services Administration's Early Childhood Comprehensive Systems Grant Program.



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Data sources, definitions and limitations

Injury fatalities: Our data source for injury fatalities was the 2013 Kentucky Death Certificates File, Vital Statistics Branch, Kentucky Department for Public Health (FILE PROVISIONAL AT TIME OF THIS REPORT). Selection criteria included Kentucky residence, age 0 to 5 years, and underlying cause of death V01-Y36, Y85-Y87, Y89, or U01-U03. Mechanism and manner of injury were based on the underlying cause of death code.

Injury hospitalizations and ED visits: Our data sources for injury hospitalizations and ED visits were the 2013 Kentucky Inpatient Hospitalization Claims Files and Outpatient Services Claims Files, Office of Health Policy, Kentucky Cabinet for Health and Family Services (FILE PROVISIONAL AT TIME OF THIS REPORT). Case selection was limited to discharges of Kentucky residents, ages 0 to 5 years, from nonfederal, acute care inpatient facilities. Readmissions and transfers could not be excluded because unique patient identifiers are not available. Deaths occurring in the hospital were included. An injury subset for hospitalizations was created by selecting discharges having a principal diagnosis code in the following ranges: 800–909.2, 909.4, 909.9, 910–994.9, 995.5–995.59, 995.80–995.85. An injury subset for emergency department visits was created similarly, but also included visits having a valid external cause of injury code regardless of the principal diagnosis. KIPRC follows the practice of the Office of Health Policy in identifying ED visits within the outpatient services claims file. Beginning with the 2013 report, ED visits were identified using a pre-defined service marker that is based on CPT and revenue codes. As a result, caution should be used when comparing ED counts from reports for 2013 and subsequent years with ED counts from reports for 2012 and earlier years.

Urban-rural designations: Classification of Kentucky counties as urban, semi-rural or rural was based on the United States Department of Agriculture’s Rural-Urban Continuum Codes (RUCC) classification scheme

Hospital/ED charges: The charges in this report represent the amount billed by the hospital or ED to the primary expected payor. Charges are generally greater than the adjudicated amount paid to the facility.

Underrepresentation of child maltreatment: The data sources used in this report will capture child maltreatment clearly documented as assault, abuse and homicide (Leeb et al, 2008). However, child maltreatment is suspected to be underrepresented in administrative hospital claims-based data systems due to multiple factors, including coding guidelines (McKenzie & Scott, 2011); hesitation to report suspected child abuse/neglect by physicians (Jones et al, 2008), and lack of adequate training regarding the identification of child maltreatment (Christian, 2008). Additional injury categories which may contain misclassified cases of maltreatment included falls, poisoning, burns, drowning, fractures, and other blunt trauma injuries (Grayson 2011).

Emergency department poisoning visits: The case definition for injury ED visits used in this report includes records with a valid external cause of injury code, even if the principal diagnosis was not an injury. This case definition resulted in the inclusion of 945 poisoning cases in which the external cause of injury code indicated “accidental poisoning by second-hand tobacco smoke” (E869.4), but the principal diagnosis was something other than injury (e.g. asthma, upper respiratory infection, cough, etc.) These cases represent 75% of all ED poisoning visits for infants and 43% of all ED poisoning visits for children ages 1 to 5 years.



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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.

KENTUCKY DEPARTMENT FOR PUBLIC HEALTH
KENTUCKY INJURY PREVENTION AND RESEARCH CENTER

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